Abundance, Distribution and Biology of Spiny Dogfish *(Squalus acanthias)* in Hecate Strait During Sept 7 - Oct 1, 1982

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ABUNDANCE, DISTRIBUTION, AND BIOLOGY OF SPINY DOGFISH (*Squalus acanthias*) IN HECATE STRAIT DURING SEPT 7 - OCT 1, 1982

by

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ABSTRACT

Saunders, M. W., G. A. McFarlane, and M. S. Smith. 1984. Abundance, distribution, and biology of spiny dogfish (Squalus acanthias) in Hecate Strait during Sept 7-Oct 1, 1982. Can. MS Fish. Aquat. Sci. 1754: 161 p.

A random, stratified trawl survey was conducted in Hecate Strait, British Columbia, Sept 7-Oct 1, 1982, the purpose of which was to provide information regarding the abundance, distribution, and biology of the spiny dogfish (Squalus acanthias).

The total biomass of marketable-sized dogfish (>70 cm), for Hecate Strait, between depths of 18 to 183 meters (10-100 fath) was 59,958-±23,317 t, calculated using the area swept between the doors and a catching coefficient of 0.6. The total biomass calculated over the same area using the area swept by the net and a catching coefficient of 1.0 was 102,822-±39,997 t.

A total of 11,101 fish were sampled for length and sex, of which 65% were female. Lengths ranged from 51-99 cm for males and from 46-128 cm for females. The majority (97%) were longer than 60 cm.

The lengths at 50% maturity calculated for 1673 males and 2910 females were 72.3 cm and 94.2 cm, respectively.

This report also presents all biological data collected during the cruise as well as haul locations and catch summaries.

Key words: abundance, distribution, survey, biomass, spiny dogfish, biology, Hecate Strait.

RÉSUMÉ

Saunders, M. W., G. A. McFarlane, and M. S. Smith. 1984. Abundance, distribution, and biology of spiny dogfish (Squalus acanthias) in Hecate Strait during Sept 7 - Oct 1, 1982. Can. MS Rep. Fish. Aquat. Sci. 1754: 161 p.

On a mené un levé aléatoire stratifié à l'aide d'un chalut dans le détroit d'Hécate (Colmbie-Britannique), du 7 septembre au 1er octobre 1982, pour recueillir des données sur l'abondance, la répartition et la biologie de l'aiguillat commun (Squalus acanthias).

La biomasse totale d'aiguillats de taille commerciale (70 cm), calculée à partir de l'aire draguée entre les panneaux et un coefficient de capture de 0,6, s'élevait à 59 958 ± 23 317 t pour des profondeurs allant de 18 à 183 mètres dans le détroit d'Hécate. En utilisant l'aire draguée par le chalut et un coefficient de capture de 1,0, on obtient une biomasse totalisant 102 822 ± 39 997 t pour la même région.

La longueur et le sexe de 11 101 poissons - 65% étaient des femelles - ont été notés. La longueur variait entre 51 et 99 cm chez les mâles et entre 46 et 128 cm chez les femelles. La plupart (97%) mesuraient plus de 60 cm.

La longueur à laquelle 50% des individus étaient matures, calculée pour 1 673 mâles et 2 910 femelles, s'élevait à 72,3 et à 94,2 cm respectivement.

Sont aussi présentées toutes les données biologiques recueillies au cours de l'expédition, en plus de la position des levés et les résumés des prises.

Mots-clés: abondance, répartition, levé, biomasse, aiguillat commun, biologie, détroit d'Hécate

INTRODUCTION

The spiny dogfish (Squalus acanthias) is abundant in the northeast Pacific Ocean ranging from southern California to the Gulf of Alaska. Since 1976, commercial interest has been increasing within the Canadian fleet, with an average of 2556 t landed annually since 1977 from British Columbia waters. The fishery peaked in 1979 at 4757 t. This trend, coupled with concerns over the impact of dogfish on other commercially important species, has resulted in an increase in research effort on the biology, distribution and abundance of dogfish.

This report presents preliminary abundance estimates and information on the biology and distribution of dogfish collected on a survey conducted from September 7, 1982 - October 1, 1982 in Hecate Strait, British Columbia. Information on the distribution of dogfish during longline surveys conducted in 1977, 1978, and 1981 by the International Pacific Halibut Commission (IPHC) and during a flatfish trawl survey conducted in 1980 has also been included.

METHODS

VESSEL AND GEAR

The entire survey was conducted with the R/V G.B. REED, a side trawler of 752 gross tons and 54 m (177 ft) overall length. The vessel is propelled by a single diesel engine developing 1000 hp and driving an adjustable-pitch propeller (Westrheim 1970).

A 23.8 m (78 ft) eastern trawl was used throughout the survey (Fig. 1). The net was fished with 27.4 m (15 ft) sweep lines with the vessel's 1.4 x 3.2 m (4.5 x 10.5 ft) wooden Brompton doors.

A SIMRAD EK38A sounder was used to define suitable bottom type.

SURVEY DESIGN

The survey area (Fig. 2) extended from 52°36'N latitude to 54°15'N latitude between the depths of 18.3 m (10 fath) and 182.9 m (100 fath). The area was divided into squares of five minutes of latitude by five minutes of longitude and it was planned to occupy each rectangle selected with a thirty minute haul. The suitability of the bottom type, direction and ultimate duration of the haul were left to the captain's discretion.

The allocation of effort to squares was based on real-time results from squares selected at random from gridlines in northern, central and southern portions of the survey area, and fished during the first week of the survey. The decision to use real-time information stemmed from a lack of data defining spatial and temporal distribution of the dogfish. Preliminary fishing indicated no difference in catch rates with latitude, however, higher catch rates did occur at depths between 73-110 m (40-60 fath). The number of hauls allocated to the 36-71 m (20-39 fath), 72-108 m (40-59 fath), and 109-183 m (60-100 fath) strata was based on a subjective estimate of the relative fish densities and the approximate areas of the strata (Mackett 1973). Hauls in each stratum were selected at random from three to four successive tracklines daily to minimize vessel movement. Areas to be fished the following day were sounded at night to eliminate selected squares with untrawlable bottom. Fishing took place during daylight hours exclusively to avoid any bias due to diel movements.

Sampling in less than 37 m (20 fath) was restricted due to the limited capabilities of the vessel in shallow water. Because of this, sampling effort within stratum one was not proportional either to fish density or to the area of the stratum.

Hauls were grouped by stratum with mean catch and variance calculated for each stratum. Biomass of each stratum was the product of the number of hauls possible in the stratum area, the catching coefficient and the mean catch. Biomass calculations include areas of untrawlable bottom because previous longline surveys conducted by INPFC indicate that dogfish are present throughout Hecate Strait and that distribution appears homogenous with depth. Confidence limits were calculated using Cochran's (1977) method. Appendix 1 details methodology used in the biomass calculations. Hauls deemed unsuitable due to hook-ups or gear problems were not used in the biomass calculations. The distance between the doors used in area swept calculations was calculated from net spread (Carrothers 1980) taken from dimensions for a similar trawl (Anon 1978).

The area swept by the net has traditionally been used as the effective path width of the trawl, however, more recent surveys have taken into account the herding effect of the doors (Foster et al. 1981) and consider the path width of the doors to provide a more accurate estimate (Leaman and Nagtegaal 1982). Research on trawl efficiency using sector-scanning sonar (Harden-Jones et al. 1977) produced catching coefficients for plaice (Pleuronectes platessa) of .44 and .61 for the area swept by the doors and the net, respectively. The trawls used in the plaice experiments did not use door to door tickler chains which, according to the authors, could markedly increase the efficiency of the trawl. In view of the near bottom habit of dogfish and the demonstrated sensitivity of sharks to underwater sound (Myrberg 1978) it is likely that the herding effect of the warps is more pronounced than for plaice hence catching coefficients of 1.0 and 0.6 for the area swept by the net and the doors respectively, have been used.

Biomass estimates of marketable size fish were calculated as above using haul weights adjusted by subtracting the weight of fish measuring less than 70 cm. The weight of fish less than 70 cm was calculated by obtaining the summed products of the number of fish at each centimeter interval and the weight associated with fish at that interval (Fig. 3).

Stratum areas were calculated by two methods: north of 54°N latitude using pre-existing computer graphics hardware and software[a] and south of 54°N latitude manually, by the measurement and integration of areas of two minute strips of latitude over the length and width of the stratum (Westrheim, pers. comm.).

Distance towed was the straight line distance between the start and finish Loran coordinates. The duration of each haul was recorded from the moment the warps were in the towing block to the time that hauling back commenced.

BIOLOGICAL SAMPLING

A total of 85 hauls were completed during the survey. Bridge log and catch information by haul are presented in Appendix Table 1. Catch rates by stratum and haul are presented in Table 1. In all but two hauls the entire catch was sorted by species, tubbed and weighed. Hauls 17 and 32 were deemed too large to process and representative subsamples were taken and total species weights calculated from relative sample species weights applied to a visual estimate of the total catch.

Dogfish catches were alternately tagged or sampled. Fish were tagged with modified discs following the method of McFarlane et al. (1982).

Dogfish were measured from the tip of the snout to the tip of the upper lobe of the caudal fin when depressed in a line horizontal with the body (total length). Maturity states were assigned according to Beamish and Smith (1976) (Appendix Table 2). Second dorsal spines were collected for ageing (Ketchen 1975). Stomach contents were determined visually with samplers estimating first the total volume (cc's) of food in the stomach and then assigning the relative proportion in tenths to each item in the stomach. Dogfish were weighed[b] to the nearest gram.

Other species including Pacific cod, halibut, lingcod, pollock, and various rockfish were sampled at the request of other groundfish investigations. A list of common and scientific species names is found in Appendix Table 3. Fork lengths were taken to the nearest centimeter. Age and stomach samples for these species were taken as time permitted.

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[a]Apple II graphics tablet software area calculation.

[b]Weights obtained using a SYBRON Digimetric scale (type 300KI) integrating over a ten second interval.

OCEANOGRAPHIC SAMPLING

Water column temperature profiles were collected from stations (Fig. 4, Appendix Table 4) in Queen Charlotte Sound and Hecate Strait using an XBT (expendable bathythermograph). Profiles are available through either the Fisheries Ecology and Groundfish Section, Pacific Biological Station, Nanaimo, B.C. or the Marine Environmental Data Service, Ottawa.

RESULTS AND DISCUSSION

BIOMASS

Biomass estimates are presented for each stratum in Table 2. Because of the difficulty of fishing shallow water (<35 m) only nine hauls were made within stratum one. Available information, however, indicates that a large percentage of the biomass may be present in this stratum, therefore total biomass estimates have been presented (Table 3) both with and without stratum one. The biomass of marketable-sized fish (>70 cm) for the Hecate Strait survey area using the area swept between doors and a catching coefficient of 0.6 was 59,958 t-±23,317 t for the 95% confidence limits. Using the area swept by the net and a catching coefficient of 1.0, biomass was 102,822 t-±39,997 t for the 95% confidence limits. As mentioned earlier, the estimate calculated using the area swept by the net is more likely to be an overestimation.

While no prior measures of absolute abundance in Hecate Strait are available for comparison, a previous coastwide assessment has been made. The coastwide assessment (Ketchen 1969) using catch and effort data from the 1940s liver fishery, estimated that the virgin biomass of marketable dogfish from Oregon to northern British Columbia including the Strait of Georgia and Puget Sound was between 300,000 and 500,000 t. Present management strategies assume the portion of the virgin marketable stock that resided in Canadian waters to be 200,000 t of which 1/3 (66,000 t) was attributed to the Strait of Georgia and the remaining 2/3 (133,000 t) to the offshore waters (Wood et al. 1979). Assuming that the stock is at historic levels, the biomass of dogfish in Hecate Strait determined in this study accounts for a significant portion of the offshore stock.

DISTRIBUTION

Dogfish were present throughout the entire survey area. A reference map of place names is presented in Figure 5. A distribution and abundance

map[a] based on catch rates (kg/hr) over the survey area is presented in Figure 6a. Abundance was variable, with centres of highest abundance occurring on the Reef Island flats west of the Horseshoe Ground and north and east of the ten fathom contour of Dogfish Bank east of Cape Ball. The largest haul (Haul 32) occurred northwest of Banks Island. Dogfish were least abundant immediately east of the Horseshoe Ground, northeast of White Rocks and in the vicinity of the Two Peaks-Butterworth ground.

Dogfish distribution and abundance based on catch rates from the 1980 juvenile flatfish survey of Hecate Strait (Stocker et al. 1980) are presented in Figure 6b. Abundance was high between 18-37 m (10 and 20 fath) along the east coast of the Queen Charlotte Islands with peak abundance occurring east of Skidegate Inlet to Cape Ball, east of Rose Spit and east of Lyell Island.

Unpublished catch rate (numbers of dogfish/1000 hooks) data from the International Pacific Halibut Commission longline surveys conducted during 1977, 1978, and 1981 were used to produce maps presented in Figures 6c, 6d, and 6e, respectively. Dogfish were present throughout the survey area during all three years, except during 1977 and 1981 at depths exceeding 183 m (100 fath). Peak abundance occurred at Reef Island flats.

In summary, dogfish are present throughout Hecate Strait during the period from August to September. Abundance is greatest in waters shallower than 37 m (20 fath) from Rose Spit to the Reef Island Flats.

BIOLOGICAL STUDIES

A summary of dogfish sample type by haul is presented in Table 4. A total of 11,101 fish were sampled for length and sex of which 3899 were male and 7202 were female (2 fish unsexed). Length frequencies by set are found in Appendix Table 5. Dogfish ranged from 44-105 cm for males and from 44-128 cm for females (Fig. 7). The absence of small dogfish (<60 cm) is not unusual as fish of this size tend to be present in the midwater and remain segregated from the adults (Beamish and Smith, 1976; Beamish et al. 1982).

Length frequency histograms by sex for all sets combined are presented in Figure 7. The length distribution is similar to that found in previous studies (Ketchen 1975; Jones and Geen 1977b), males with a single mode between 80 and 85 cm and females bimodal with a large peak at 85 cm and a smaller peak at 105 cm.

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[a]SYMAP graphics are available from the Laboratory for Computer Graphics and Spatial Analysis Group, Graduate School of Design, Harvard University. Each point on the map, within the survey area, is assigned a density value based on the values of the nearest actual data points found within a standard search radius assuming continuous variation between actual data points.

A total of 4593 dogfish were sampled for maturity condition. Appendix Table 6 contains a summary of maturity states by set. The majority of females were immature (57%) while the majority of males were mature (79%). Most mature females (64%) were with term pups (R_3D_6-D_7) with the yolk sac close to being absorbed. Fifteen percent of the mature females were mid-term (R_2D_6).

The length at 50% maturity calculated for 1673 males and 2910 females using probit analysis (Leslie et al. 1945) was 72.3 and 94.2 cm for males and females, respectively.

A length weight relation (1) (Fig. 3) expressed as

(1) $W(kg) = 0.267 \times 10^{-3} L(cm)^{3.783}$

was calculated from 258 males and 414 females combined. The length weight relationships for males and females (all maturity conditions) are (2) and (3) respectively:

(2) $W(kg) = 0.292 \times 10^{-2} L(cm)^{3.0641}$

(3) $W(kg) = 0.185 \times 10^{-3} L(cm)^{3.7012}$

These length-weight relationships are similar to those previously published by Jones and Geen (1977a) for dogfish in the Strait of Georgia.

Stomach contents from 2659 dogfish were sampled. Table 5 contains a summary of stomach contents. A total of 885 (33%) of the stomachs were empty. Juvenile dogfish (<60 cm) fed primarily on invertebrates (64% of total volume), principally euphausiids, ctenophores and shrimp.

The principal prey species, by volume, of adult dogfish (>60 cm) were herring (16.8%), euphausiids (14.8%), jellyfish (7.5%), and octopus (7.2%). Dogfish are opportunistic in their feeding habits as indicated by the large number of prey items (Table 5) and the low incidence of occurrence of each item. For instance, herring, although a principal prey species by volume, is present in only 3.8% of the stomachs examined.

A further 214 stomachs were preserved intact in 10% formalin for detailed analysis in the laboratory.

Two thousand and fifty-eight second dorsal spines were collected for age and growth studies.

A total of 4025 dogfish were tagged and released.

BIOLOGICAL SAMPLING - Other species

A summary of biological samples collected for all species other than dogfish is presented in Table 6.

A total of 646 sablefish were sampled for length and sex with a further 305 sampled for length only. Length frequencies by haul are presented in Appendix 7. Modes for males and females occurred at 51-54 cm and 53-55 cm, respectively (Fig. 8). Age analysis identifies these fish to be from the strong 1977 year class. A mode between 36 and 38 cm is attributable to a large number of juveniles captured during one haul (haul 16) adjacent to White Rocks (Fig. 5).

A total of 596 sablefish stomachs were examined. Of these 130 were empty (Table 7). Sablefish (<55 cm) fed primarily (volume) on euphausids, herring, Pacific ocean perch, and jellyfish. Sablefish (>55 cm) fed on Pacific ocean perch, jellyfish, sipunculids, euphausids, and hermit crab.

Length frequencies for pollock by set, are presented in Appendix Table 8 and for Pacific cod, halibut, and lingcod (all sets combined) in Appendix Table 9.

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Table 1. Dogfish catch rates (kg/hr) by stratum by haul for G.B. REED cruise Sept 7-Oct 1, 1982.

Stratum 1 (11-19 fath) (20-35 m)		Stratum 2 (20-49 fath) (36-71 m)		Stratum 3 (50-69 fath) (72-108 m)		Stratum 4 (70-110 fath) (109-183 m)	
Haul	Catch/ effort	Haul	Catch/ effort	Haul	Catch/ effort	Haul	Catch/ effort
23	199	1	324	6	439	2	240
59	1146	7	180	12	872	3	176
71	3370	8	170	14	908	4	132
79	2031	9	2382	16	788	10	2008
80	992	15	212	20	788	11	644
81	740	19	122	22	370	13	450
82	1088	21	82	25	132	17	90
83	1662	24	138	26	370	18	586
84	1384	28	862	27	1234	33	384
		29	214	32	6268	42	112
		30	488	34	1441	43	1530
		31	98	37	788	49	179
		35	794	38	1102	58	904
		36	506	39	438	64	260
		40	284	44	196	69	378
		41	342	48	330	70	400
		46	1134	56	374	76	250
		47	474	63	312		
		50	908	65	246		
		51	332	66	206		
		52	578	67	352		
		53	1626	68	1590		
		54	622				
		55	568				
		60	460				
		61	124				
		62	292				
		73	840				
		75	188				
		77	1224				
		78	303				

Table 2. Dogfish biomass estimates by stratum for G.B. REED cruise Sept 7-Oct 1, 1982.

Stratum	Area (sq naut. mi)	Dogfish (all lengths) Biomass (t)		Dogfish (≥70 cm) Biomass (t)	
		Doors	Net	Doors	Net
1	1299	36,863	63,217	31,039	53,229
2	703	7,604	13,040	7,457	12,788
3	508	14,234	24,410	14,017	24,038
4	721	7,701	13,206	7,444	12,766

Table 3. Dogfish total biomass estimates and confidence limits for G.B. REED cruise Sept 7-Oct 1, 1982.

	Doors				Net			
	Biomass (t)	C.I.		df	Biomass (t)	C.I.		df
		t	%			t	%	
All lengths	66,402 (29,539)	±23,931 (±14,861)	36 (50)	22 (27)	113,873 (50,657)	±41,049 (25,548)	36 50	22 (27)
≥70 cm	59,958 (28,919)	±23,317 (±14,731)	39 (50)	22 (27)	102,822 (49,593)	±39,997 (±24,586)	39 (50)	22 (27)

() Indicate values for survey area not including stratum 1.

Table 4. Summary of dogfish sampled by haul for G.B. REED cruise Sept 7-Oct 1, 1982.

Haul	L/S M	L/S F	L/S T	Mat.	Stom.	Weight	Age[a]	Tag[b]	Sample type/ remarks
1	28	24	52	-	-	-	-	52	T.C.=Total catch
2	28	17	45	44	45	-	-	-	T.C.
3	18	15	33	33	33	-	-	-	T.C.
4	12	14	26	26	26	-	-	-	T.C.
5	-	-	-	-	-	-	-	-	-
6	47	122	169	16	16	-	-	153	T.C.
7	15	14	29	29	29	-	-	-	T.C.
8	14	10	24	24	24	-	-	-	T.C.
9	81	205	286	286	116	-	286	-	T.C.
10	136	320	456	455	-	-	456	-	T.C.
11	69	63	132	-	-	-	-	132	T.C.
12	102	81	183	177	180	-	-	-	T.C.
13	43	46	89	-	-	-	-	-	T.C.
14	82	99	181	-	-	-	-	167	T.C.
15	26	7	33	-	-	-	-	33	T.C.
16	64	99	163	-	-	-	-	153	T.C.
17	1	4	5	-	-	-	-	-	2 splits sampled
18	15	82	97	97	97	-	-	-	T.C.
19	19	11	30	30	30	-	-	-	T.C.
20	88	87	176	176	176	175	-	-	T.C.
21	15	2	17	17	17	17	-	-	T.C.
22	48	39	87	-	-	-	-	79	T.C.
23	13	16	29	26	29	-	-	-	T.C.
24	13	13	26	26	26	26	-	-	T.C.
25	11	1	12	12	12	12	-	-	T.C.
26	33	39	72	-	-	-	-	71	T.C.
27	88	176	265	-	-	-	-	231	T.C.
28	64	150	214	212	214[c]	-	214	-	T.C.
29	28	14	42	-	-	-	-	-	T.C.
30	58	35	93	-	-	-	-	78	T.C.
31	13	6	19	19	-	-	-	-	T.C.
32	161	848	1009	504	-	-	506	-	Random- 7 splits sampled
33	29	53	82	78	82	-	-	-	T.C.
34	62	233	295	-	-	-	-	274	T.C.
35	32	70	102	102	-	-	-	-	T.C.
36	52	50	102	-	-	-	-	91	T.C.
37	42	117	159	-	-	-	-	144	T.C.
38	44	171	215	213	214	-	-	-	T.C.
39	16	46	62	62	62	62	-	-	T.C.
40	16	25	41	-	-	-	-	37	T.C.
41	38	30	68	-	-	-	-	57	T.C.
42	5	19	24	23	24	-	-	-	T.C.
43	79	233	312	-	-	-	-	265	T.C.
44	15	13	28	28	28	28	-	-	T.C.
45	20	8	28	28	28	28	-	-	T.C.
46	65	106	171	-	-	-	-	139	T.C.
47	27	33	60	60	60	60	-	-	T.C.

Table 4 (cont'd)

Set	L/S M	L/S F	L/S T	Mat.	Stom.	Weight	Age[a]	Tag[b]	Sample type/ remarks
48	35	66	101	99	101	-	-	-	T.C.
49	2	29	31	31	31	-	-	-	T.C.
50	66	115	181	-	-	-	-	160	T.C.
51	12	37	49	49	49	-	-	-	T.C.
52	33	122	155	-	-	-	-	130	T.C.
53	106	145	251	-	-	-	-	197	T.C.
54	5	52	57	57	57	-	-	-	T.C.
55	12	49	61	-	-	-	-	50	T.C.
56	19	39	58	-	-	-	-	55	T.C.
57	17	94	111	111	111	111	-	-	T.C.
58	52	154	206	202	205	-	-	-	T.C.
59	44	110	154	-	-	-	-	134	T.C.
60	7	39	46	46	46	-	-	-	T.C.
61	8	11	19	19	19	19	-	-	T.C.
62	4	24	28	-	-	5	-	23	T.C.
63	10	41	51	-	-	-	-	43	T.C.
64	19	18	37	37	37	-	-	-	T.C.
65	21	20	41	40	41	-	-	-	T.C.
66	3	19	22	22	22	22	-	-	T.C.
67	16	31	47	-	-	-	-	42	T.C.
68	123	155	278	-	-	-	-	243	T.C.
69	24	32	56	-	-	-	-	51	T.C.
70	40	31	71	71	71	-	-	-	T.C.
71	389	207	596	595	100	-	596	-	T.C.
72	19	33	52	-	-	-	-	41	T.C.
73	40	66	106	-	-	-	-	90	T.C.
74	3	7	10	10	10	-	-	-	T.C.
75	3	16	19	19	19	19	-	-	T.C.
76	6	22	28	-	-	-	-	25	T.C.
77	18	104	122	-	-	-	-	112	T.C.
78	4	20	24	24	24	24	-	-	T.C.
79	402	606	1008	98	100	-	-	-	T.C.
80	106	217	323	-	-	-	-	244	T.C.
81	96	186	282	96	100	-	-	-	T.C.
82	88	187	275	100	98	-	-	-	T.C.
83	16	63	79	-	-	-	-	70	T.C.
84	40	129	169	8	8	8[d]	-	159	T.C.
85	16	40	56	56	56	56	-	-	T.C.
Total	3899	7,202	11,103[e]	4,593	2,873	672	2,058	4,025	

[a] Second dorsal spine taken.
[b] No. of fish tagged including initial tagging mortalities.
[c] Stomachs preserved intact for lab analysis.
[d] Not included in length at 50% calculations.
[e] Includes two unsexed fish (83.0 cm in tow 27 and 94.0 cm in tow 20).

Table 5. Dogfish stomach contents G.B. REED Sept 7-[illegible] 1, 1982.

	Dogfish <60 cm (total length)			Dogfish >60 cm (total length)			Total		
No. examined	44			2615			2659		
No. empty	5			880			885		
Contents	No. of obs.	Volume (cc)	% of volume	No. of obs.	Volume (cc)	% of volume	No. of obs.	Volume (cc)	% of total volume
Digested matter (unid)	17	90	29.60	654	9605.5	16.25	671	9695.5	16.32
Offal (unid)	-	-	-	7	710	1.20	7	710	1.19
Fish (unid)	3	18	5.92	102	4215.5	7.13	105	4233.5	7.12
Sablefish	-	-	-	2	475	0.80	2	475	0.79
Cymatogaster aggregata	-	-	-	2	65	0.11	2	65	0.10
Eulachon	-	-	-	1	75	0.12	1	75	0.12
Gunnel (Pholidae)	-	-	-	3	7	0.01	3	7	0.01
Hake	-	-	-	1	100	0.16	1	100	0.16
Herring	-	-	-	101	9903	16.76	101	9903	16.67
Pacific cod	-	-	-	2	350	0.59	2	350	0.58
Poacher (Agonidae)	-	-	-	3	13	0.02	3	13	0.02
Pollock	-	-	-	16	1532	2.59	16	1532	2.57
Salmon	-	-	-	8	290	0.49	8	290	0.48
Sandlance	-	-	-	57	1000.5	1.69	57	1000.5	1.68
Sculpin (unid)	-	-	-	20	109.5	0.18	20	109.5	0.18
Flatfish (unid)	-	-	-	12	951.5	1.61	12	951.5	1.60
Dover sole	-	-	-	3	74	0.12	3	74	0.12
English sole	-	-	-	23	2623	4.43	23	2623	4.41
Halibut	-	-	-	1	20	0.03	1	20	0.03
Rex sole	-	-	-	2	120	0.20	2	120	0.20
Rock sole	-	-	-	6	460	0.77	6	460	0.77
Turbot	-	-	-	19	2136	3.61	19	2136	3.59
Rockfish (unid)	-	-	-	1	20	0.03	1	20	0.03
S. alutus	-	-	-	1	150	0.25	1	150	0.25
Dogfish	-	-	-	8	552.5	0.93	8	552.5	0.93
Ratfish	-	-	-	6	688	1.16	6	688	1.15
Skate	-	-	-	1	50	0.08	1	50	0.08
Invertebrate (unid)	2	7.5	2.46	4	46	0.07	6	53.5	0.09
Crab (unid)	4	18	5.92	187	2077	3.51	191	2095	3.52
Cancer gracilis	-	-	-	2	160	0.27	2	160	0.26
C. magister	-	-	-	9	216	0.36	9	216	0.36
C. oregonensis	-	-	-	1	10	0.01	1	10	0.01
C. productus	-	-	-	2	80	0.13	2	80	0.13
Hermit crab	-	-	-	27	268	0.45	27	268	0.45
Pea crab	-	-	-	4	6	0.01	4	6	0.01
Amphipods (unid)	-	-	-	4	13	0.02	4	13	0.02
Copepods (unid)	-	-	-	1	5	0.01	1	5	0.01

Table 5 (cont'd)

Contents	No. of obs.	Volume (cc)	% of volume	No. of obs.	Volume (cc)	% of volume	No. of obs.	Volume (cc)	% of total volume
Coonstripe shrimp	-	-	-	1	5	0.01	1	5	0.01
Crangon shrimp	6	16	5.26	37	95.5	0.16	43	111.5	0.18
Euphausiids	6	47	15.46	179	8740	14.79	185	8787	14.79
Pink shrimp	-	-	-	4	14	0.02	4	14	0.02
Plankton	-	-	-	1	5	0.01	1	5	0.01
Prawn	-	-	-	2	43	0.07	2	43	0.07
Shrimp (unid)	9	29	9.53	94	467.5	0.79	103	496.5	0.83
Mollusc (unid)	3	10	3.28	17	217	0.36	20	227	0.38
Bivalves (unid)	1	9	2.96	16	209	0.35	17	218	0.36
Cockle	1	3	0.98	20	218	0.36	21	221	0.37
Horseclam	-	-	-	2	27	0.04	2	27	0.04
Moonsnail	-	-	-	1	15	0.02	1	15	0.02
Octopus	-	-	-	59	4271	7.22	59	4271	7.19
Rossia sp.	-	-	-	1	20	0.03	1	20	0.03
Shell (unid)	-	-	-	4	21	0.03	4	21	0.03
Squid	-	-	-	8	120	0.20	8	120	0.20
Polychaetes (unid)	4	26.5	8.71	45	263	0.44	49	289.5	0.48
Annelida (unid)	-	-	-	1	10	0.01	1	10	0.01
Sipunculid worms	-	-	-	18	175	0.29	18	175	0.29
Anemones (unid)	-	-	-	4	220	0.37	4	220	0.37
Jellyfish (unid)	-	-	-	82	4407	7.45	82	4407	7.42
Brachiopod	-	-	-	1	7	0.01	1	7	0.01
Bryozoan (unid)	-	-	-	1	1	0.00	1	1	0.00
Ctenophore	7	29	9.53	18	147	0.24	25	176	0.29
Starfish	-	-	-	2	29	0.04	2	29	0.04
Brown algae	-	-	-	2	5	0.01	2	5	0.01
Red algae	-	-	-	1	1	0.00	1	1	0.00
Egg case (unid)	-	-	-	1	9	0.01	1	9	0.01
Egg case (ratfish)	-	-	-	1	35	0.05	1	35	0.05
Mud	-	-	-	46	78.8	0.13	46	78.8	0.13
Rock	1	1	0.32	4	33	0.05	5	34	0.05
Total		304			59,085.8			59,389.8	

Table 6. Summary of biological samples for species other than dogfish, by set, for G.B. REED cruise Sept 7-Oct 1, 1982.

Species	Set	Sample type					Age structure no.			Sample section/ rem.
		Length	Sex	Mat.	Wt	Stom.	Fin	Otol.	Total	
Sablefish	2	147	147	147	-	145	-	-	147	T.C.
	3	33	33	33	-	33	-	-	33	T.C.
	4	60	60	60	-	60	-	-	60	T.C.
	10	58	58	58	-	58	-	-	58	T.C.
	13	272	272	-	-	99	-	-	273	Random tubs
	16	305	-	-	-	-	-	-	305	Random tubs
	17	176	176	176	-	101	-	176	176	T.C.
	49	100	100	100	-	100	-	-	100	Random tubs
Total		1151	846	574	-	596	-	176	1152	
Halibut	1	4	4	4	-	-	-	-	4	T.C.
	6	6	6	-	-	-	-	-	6	T.C.
	7	9	9	-	-	-	-	-	9	T.C.
	8	7	7	-	-	-	-	-	7	T.C.
	9	3	3	-	-	-	-	-	3	T.C.
Total		29	29	4	-	-	-	-	29	
Lingcod	7	11	11	11	-	11	11	-	11	T.C.
	10	5	5	5	-	-	5	-	5	T.C.
	12	2	2	2	-	-	2	-	2	T.C.
	16	3	3	3	-	-	3	-	3	T.C.
	18	1	1	1	-	-	1	-	1	T.C.
	20	1	1	1	-	-	1	-	1	T.C.
	24	1	1	1	-	-	1	-	1	T.C.
	25	1	1	1	-	-	1	-	1	T.C.
	32	3	3	3	-	-	3	-	3	T.C.
	35	1	1	1	-	-	1	-	1	T.C.
	39	1	1	1	-	-	1	-	1	T.C.
	40	3	4	4	-	-	4	-	4	T.C.
	42	1	1	1	-	-	1	-	1	T.C.
	43	1	1	1	-	-	1	-	1	T.C.
	44	2	2	2	-	-	2	-	2	T.C.
	46	1	1	1	-	-	1	-	1	T.C.
	51	3	3	3	-	-	3	-	3	T.C.
	54	3	3	3	-	-	3	-	3	T.C.
	55	4	4	4	-	-	4	-	4	T.C.
	56	3	3	3	-	-	3	-	3	T.C.
	57	3	3	3	-	-	3	-	3	T.C.
	60	11	11	11	-	-	11	-	11	T.C.
	61	1	1	1	-	-	1	-	1	T.C.
	62	2	2	2	-	-	2	-	2	T.C.
	63	1	1	1	-	-	1	-	1	T.C.
	65	3	3	3	-	-	3	-	3	T.C.
	66	1	1	1	-	-	1	-	1	T.C.
	68	1	1	1	-	-	1	-	1	T.C.

Table 6 (cont'd)

Species	Sample type						Age structure no.			Sample section/ rem.
	Set	Length	Sex	Mat.	Wt	Stom.	Fin	Otol.	Total	
Lingcod	73	1	1	1	-	-	1	-	1	T.C.
	75	9	9	9	-	-	9	-	9	T.C.
	77	5	5	5	-	-	5	-	5	T.C.
	78	4	4	4	-	-	4	-	4	T.C.
Total		93	94	94	-	11	94	-	94	
Pacific cod	66	250	250	-	-	-	-	-	250	T.C.
Pollock	20	197	197	-	-	-	-	-	197	Random tubs
	22	98	98	98	-	-	98	-	98	Random tubs
Total	42	295	295	98	-	-	98	-	295	

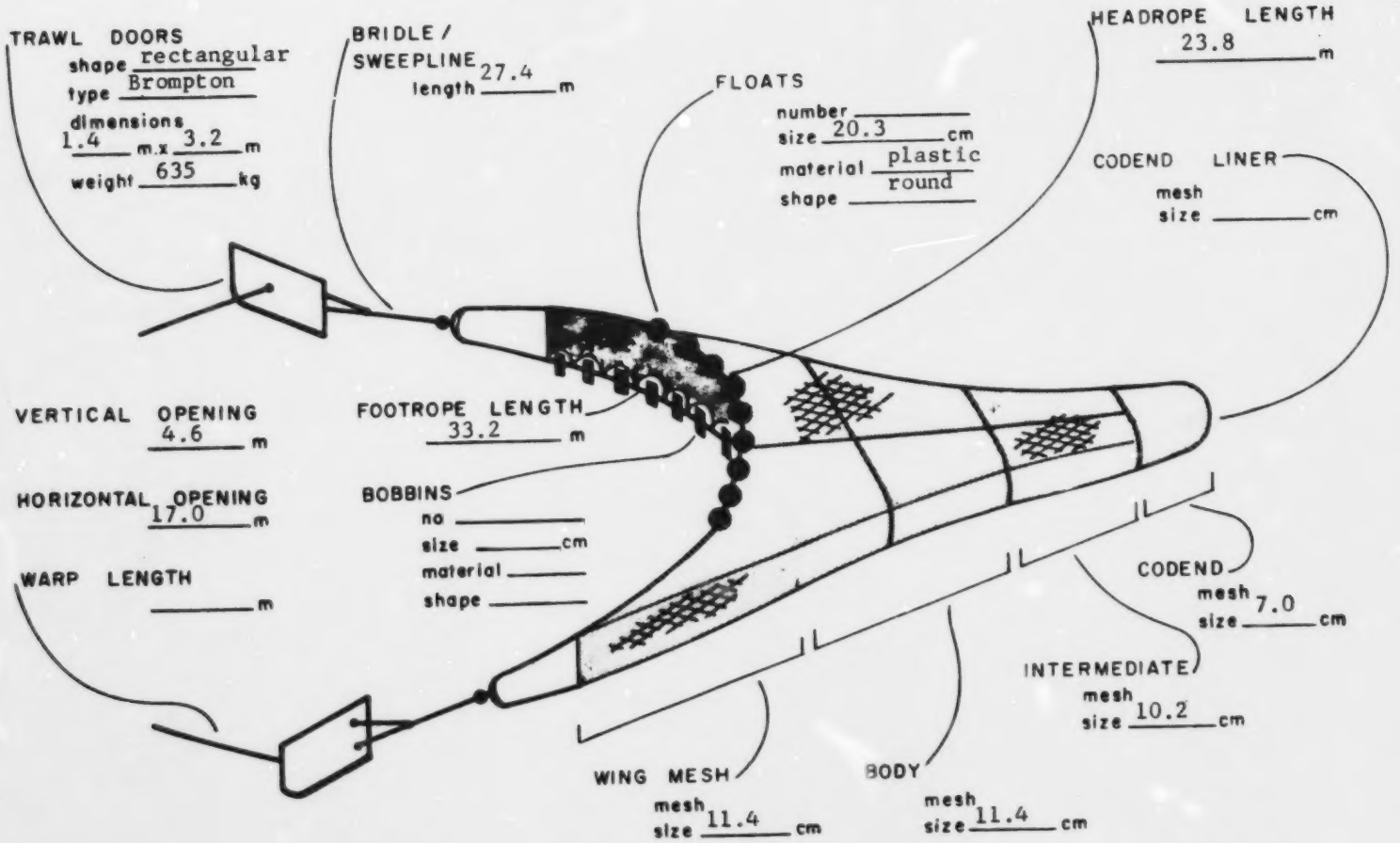
Table 7. Sablefish stomach contents, G.B. REED Sept 7-Oct 1, 1982.

	Sablefish <55 cm (fork length)			Sablefish ≥55 cm (fork length)			Total		
No. examined	521			75			596		
No. empty	108			22			130		
Contents	No. of obs.	Volume (cc)	% of Volume	No. of obs.	Volume (cc)	% of Volume	No. of obs.	Volume (cc)	% of total volume
Digested matter (unid)	144	453.2	4.56	27	215.5	15.27	171	668.7	5.92
Fish (unid)	30	449.2	4.52	4	330.0	24.07	34	779.2	6.89
Eulachon	1	75.0	0.75	-	-	-	1	75.0	0.66
Herring	14	1407.5	14.18	1	trace	-	15	1407.5	12.46
Salmon (unid)	1	25.0	0.01	1	100.0	7.29	2	125.0	1.10
Pacific ocean perch	2	350.0	3.52	2	350.0	25.53	4	700.0	6.19
Crab (unid)	1	2.0	0.02	-	-	-	1	2.0	0.01
Hermit crab	-	-	-	1	50.0	3.64	1	50.0	0.44
Amphipods (unid)	15	78.5	0.79	2	6.2	0.45	17	84.7	0.74
Copepods (unid)	3	6.0	0.06	-	-	-	3	6.0	0.05
Crangon shrimp	7	27.5	0.27	-	-	-	7	27.5	0.24
Euphausiids	189	6856.9	69.09	8	70.5	5.14	197	6927.4	61.33
Plankton	5	11.5	0.11	3	7.0	0.51	8	18.5	0.16
Shrimp (unid)	11	34.0	0.34	2	16.8	1.22	13	50.8	0.44
Mollusc (unid)	1	3.0	0.03	-	-	-	1	3.0	0.02
Octopus	1	1.0	0.01	-	-	-	1	1.0	0.01
Jellyfish	10	101.0	1.01	5	100.0	7.29	15	201.0	1.77
Polychaete (unid)	2	2.5	0.02	-	-	-	2	2.5	0.02
Seamouse (Aphroditidae)	1	18.0	0.18	-	-	-	1	18.0	0.15
Tape worm (unid)	-	-	-	2	3.5	0.25	2	3.5	0.03
Sipunculid worms	-	-	-	1	75.0	5.47	1	75.0	0.66
Bark	1	5.0	0.05	-	-	-	1	5.0	0.04
Mud	14	13.7	0.13	2	46.0	3.35	16	59.7	0.52
Seaweed (unid)	1	4.0	0.04	-	-	-	1	4.0	0.03
Total	-	9,924.5	-		1,370.5	-	-	11,295.0	

Fig. 1. NET DIMENSIONS AND CHARACTERISTICS FOR BOTTOM TRAWL

VESSEL G. B. REED NET 23.8 m (78') modified Eastern trawl

OBSERVATION PERIOD September 7-October 1, 1982



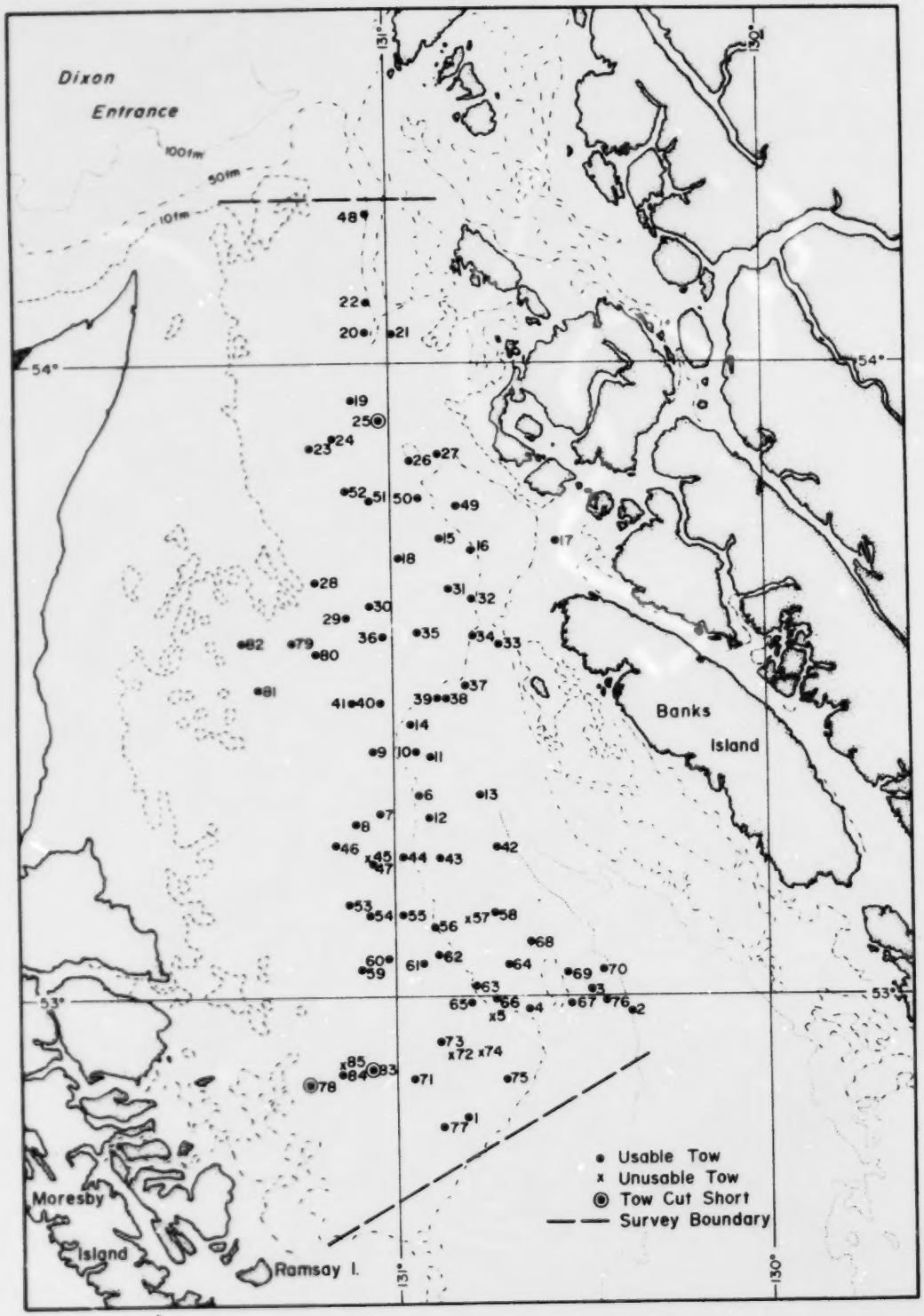


Fig. 2. Haul locations, G.B. REED, Sept. 7 -Oct. 1, 1982.

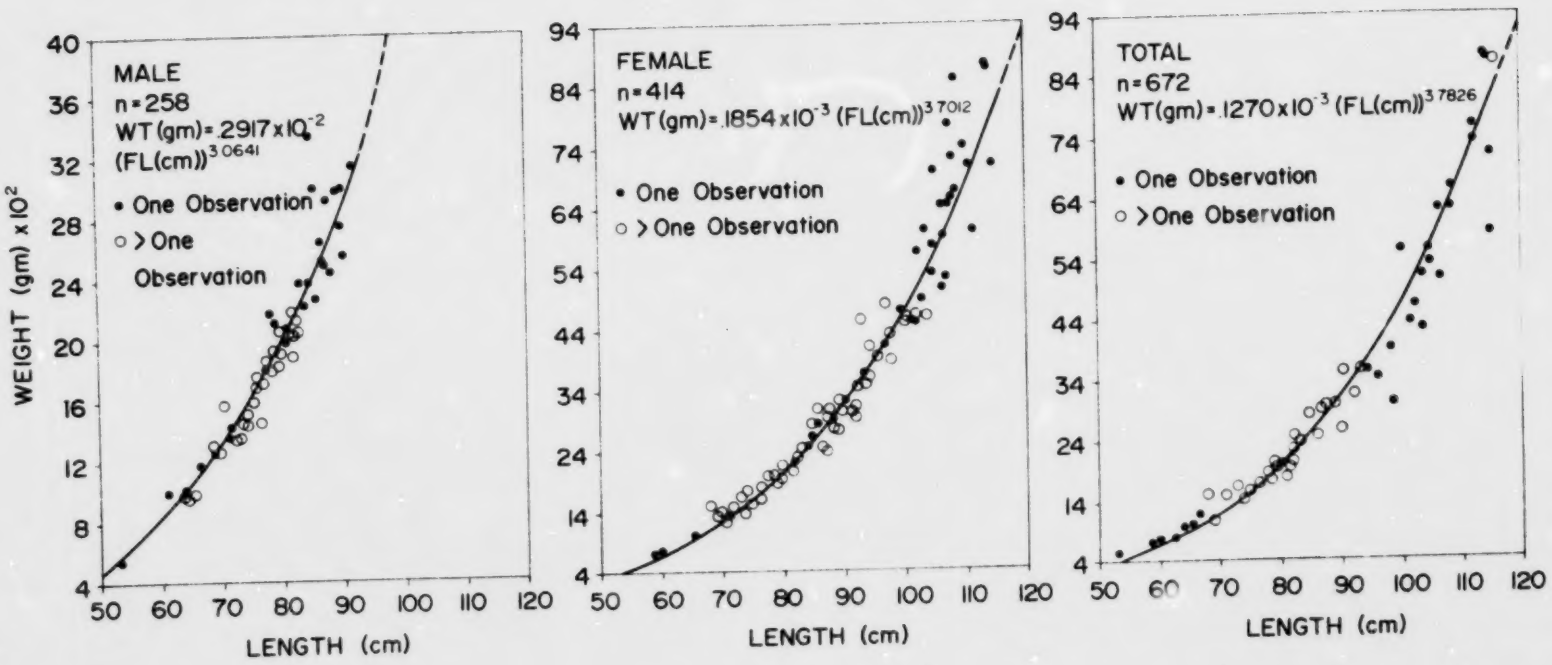


Fig. 3. Dogfish length-weight relationship for males, females and both sexes combined for G.B. REED, Sept. 7-Oct. 1, 1982.

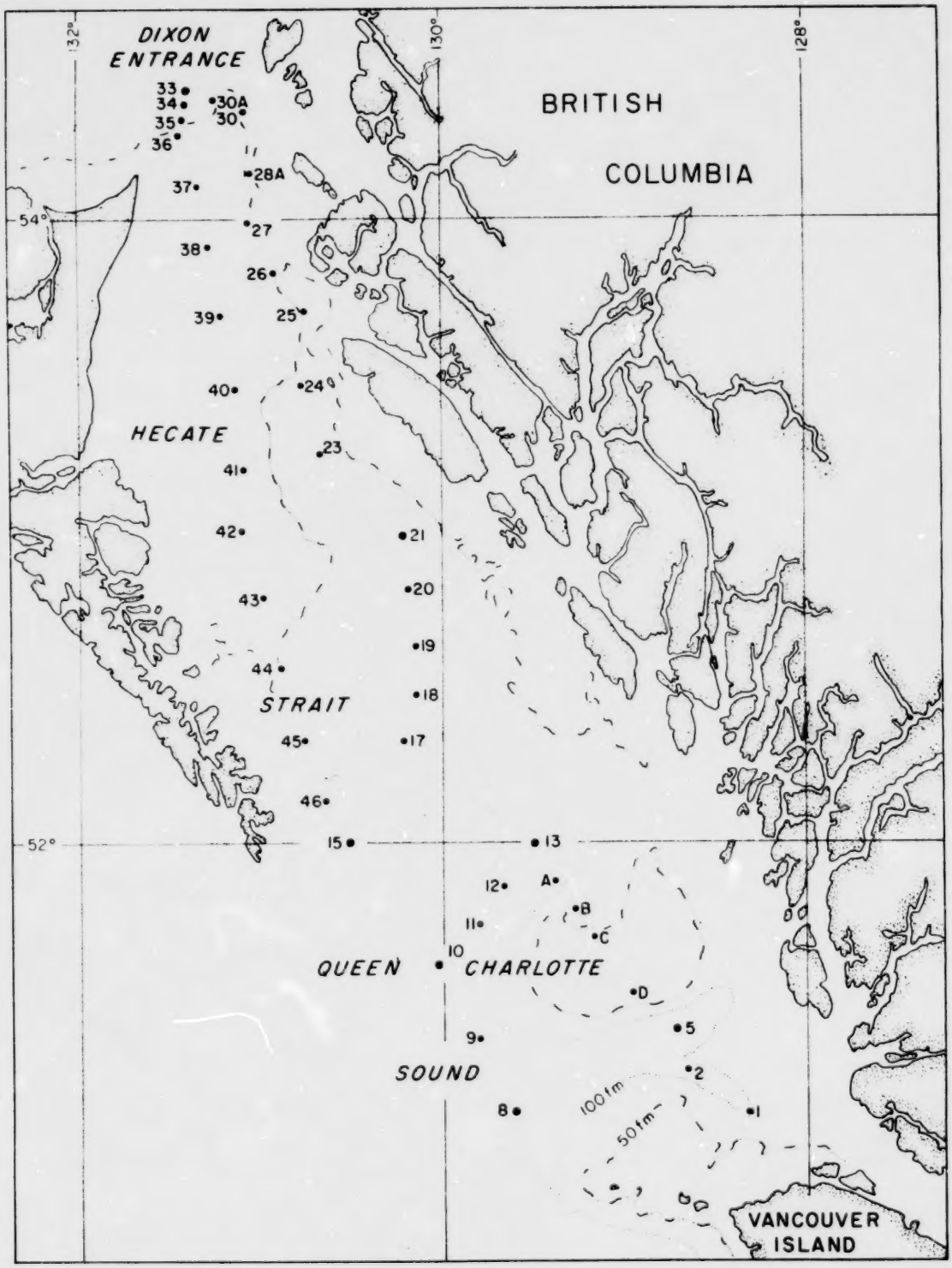


Fig. 4. Standard XBT stations occupied during G.B. REED, Sept. 7-Oct. 1, 1982.

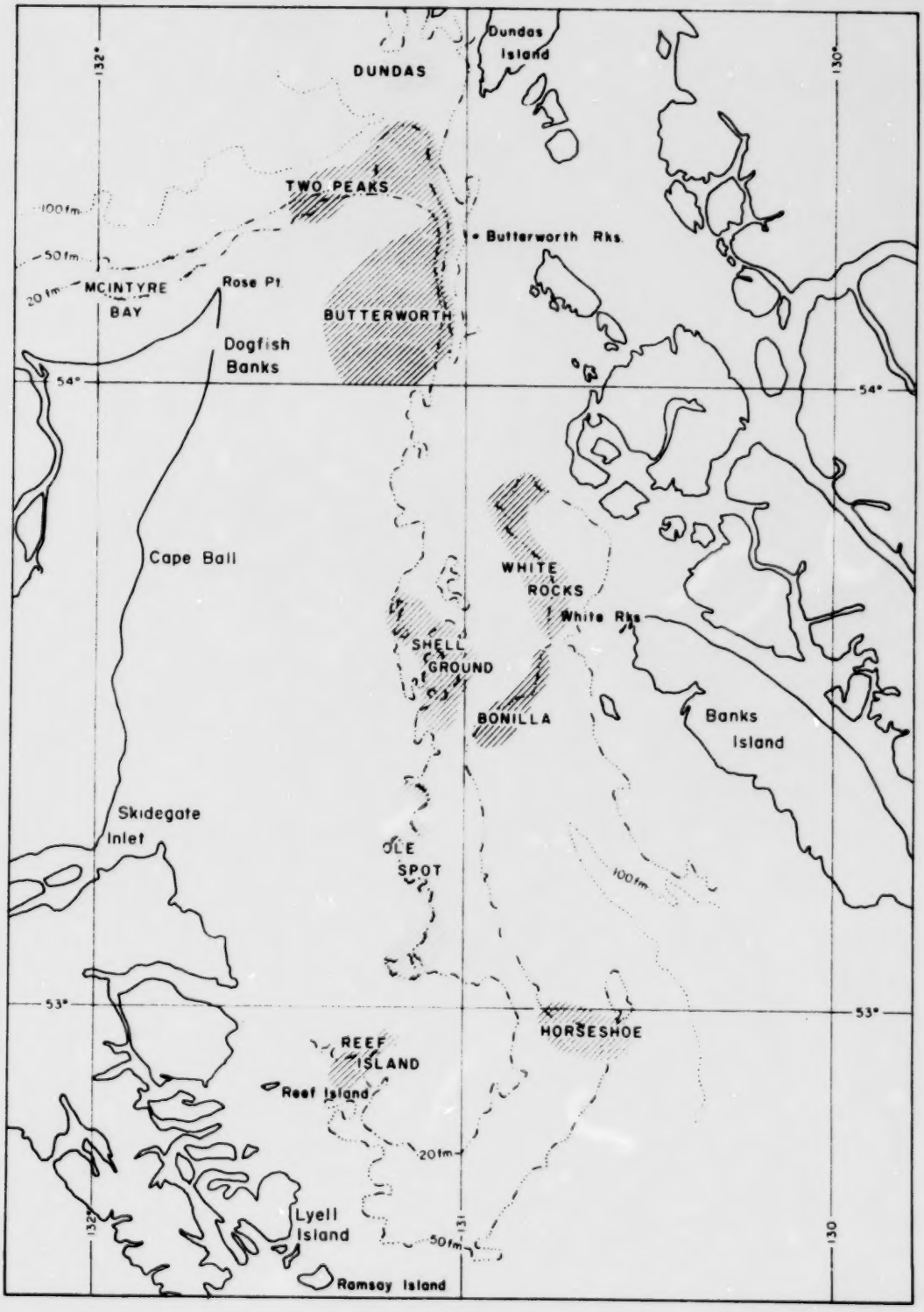


Fig. 5. Location of reference points and trawling grounds in Hecate Strait, B.C.

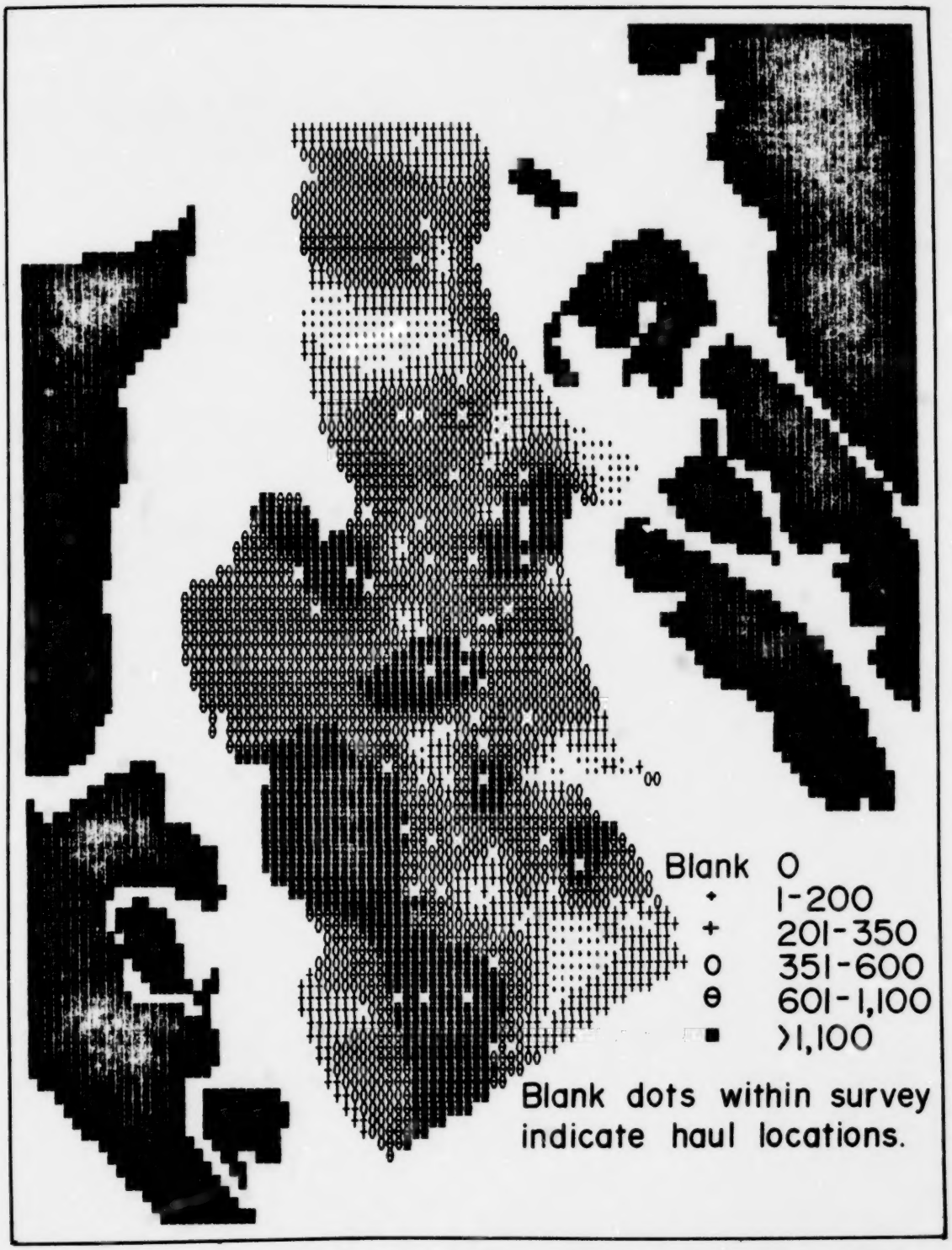


Fig. 6a. Distribution and relative abundance (kg/hr) of dogfish, G.B REED Sept. 7 -Oct. 1, 1982.

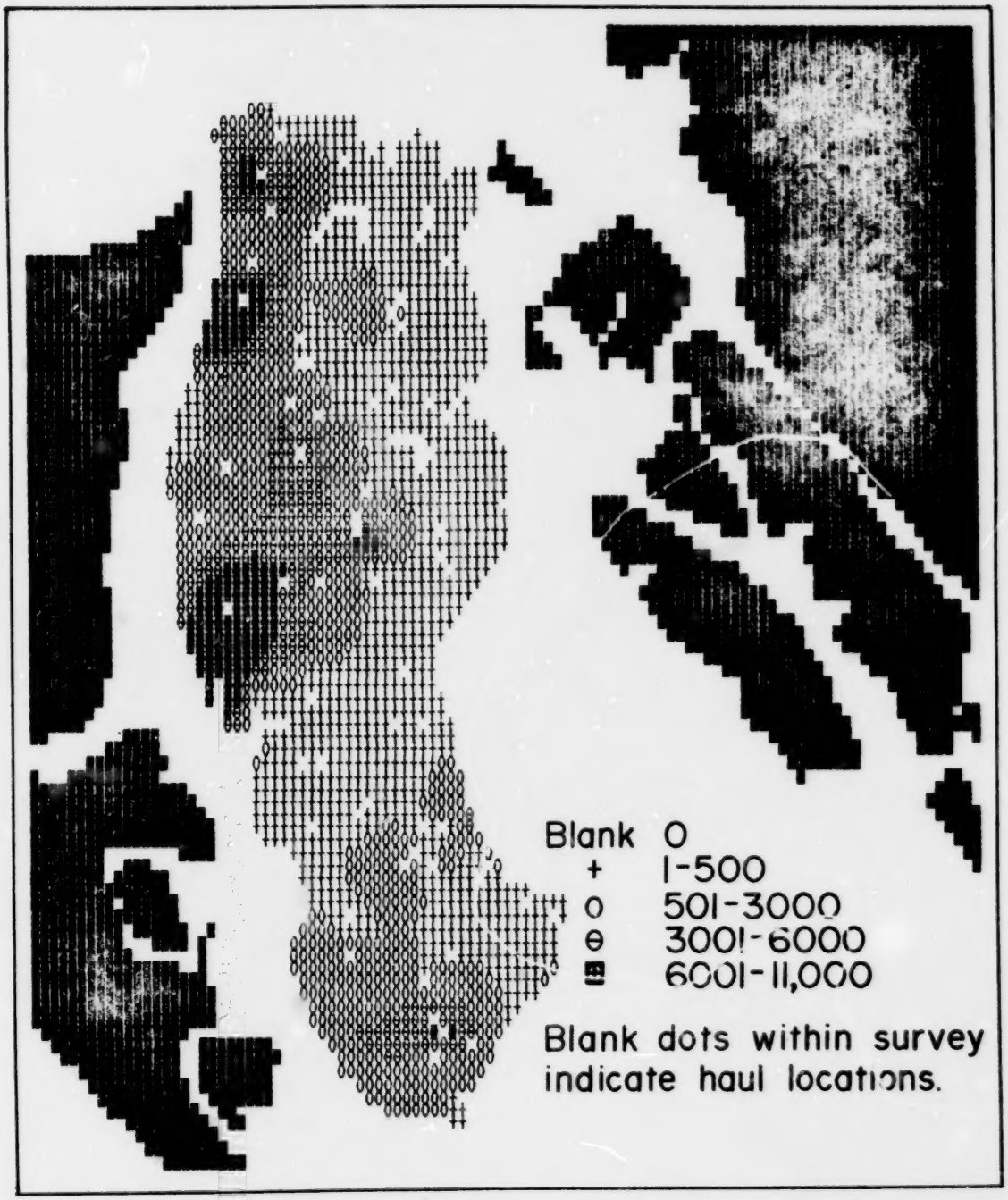


Fig. 6b. Distribution and relative abundance (kg/hr) of dogfish during August 1980 juvenile flatfish survey.

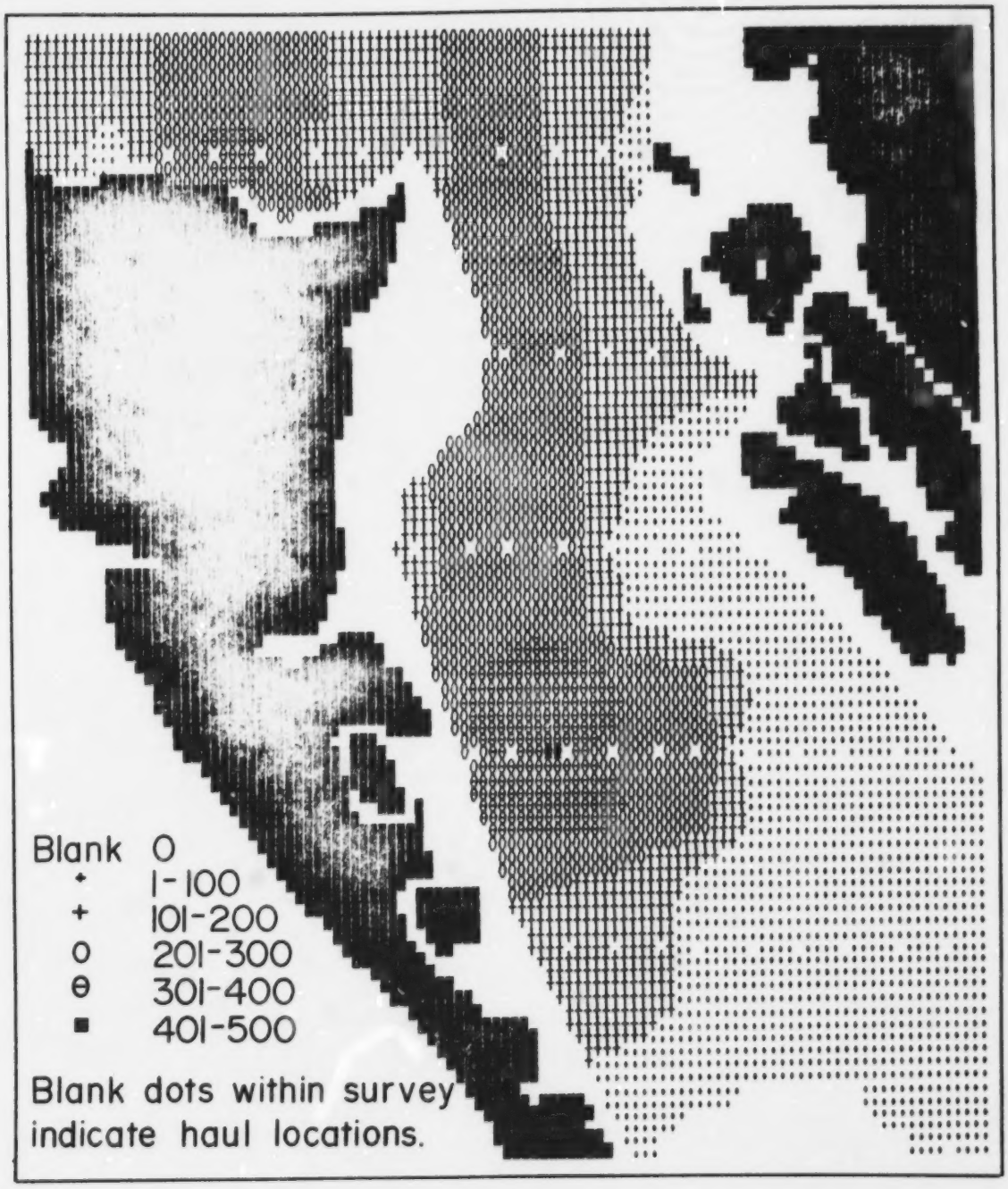


Fig. 6c. Distribution and relative abundance (no. per 1000 hooks) of dogfish during IPHC August 1977 longline survey.

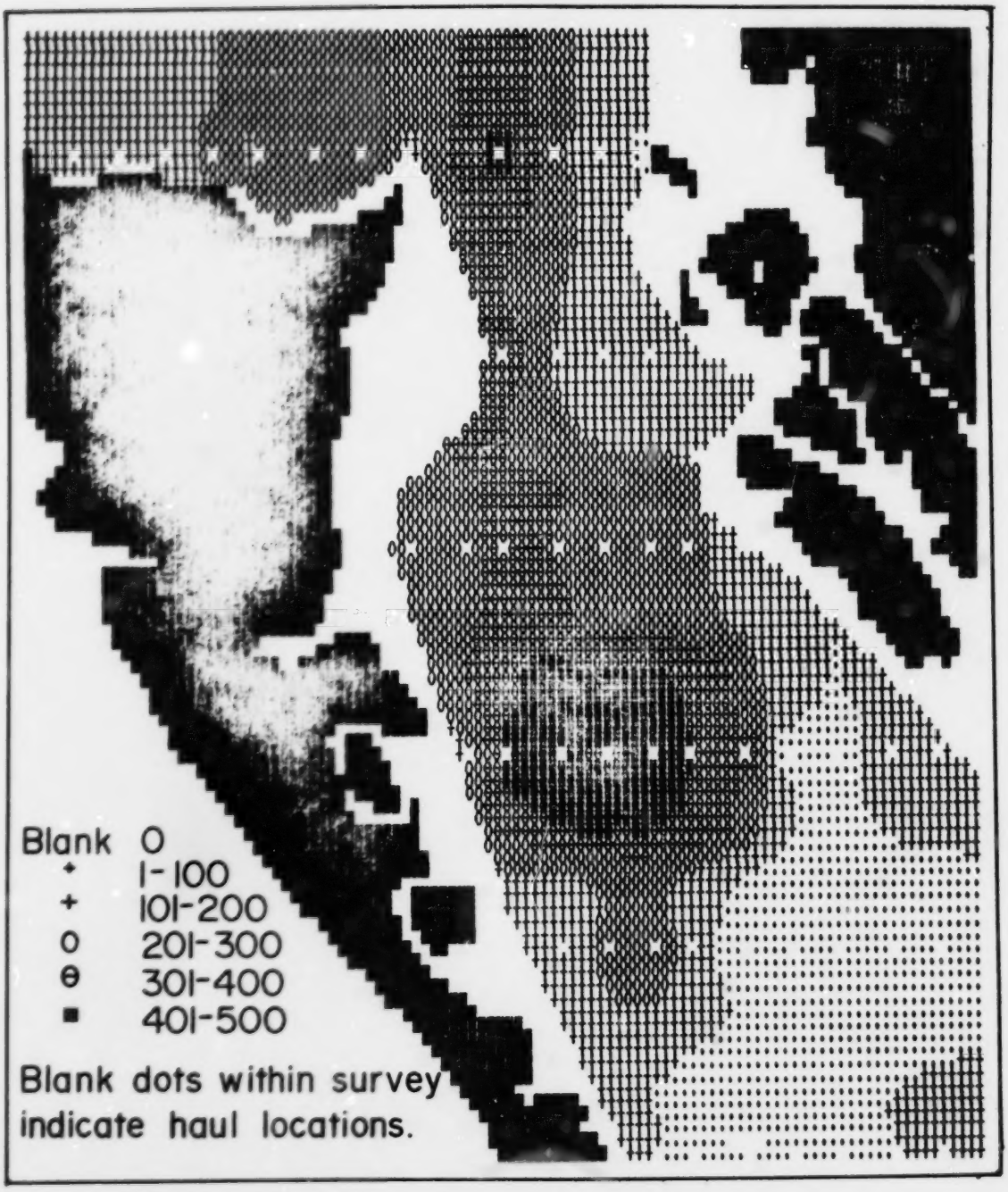


Fig. 6d. Distribution and relative abundance (number per 1000 hooks) of dogfish during IPHC August 1978 longline survey.

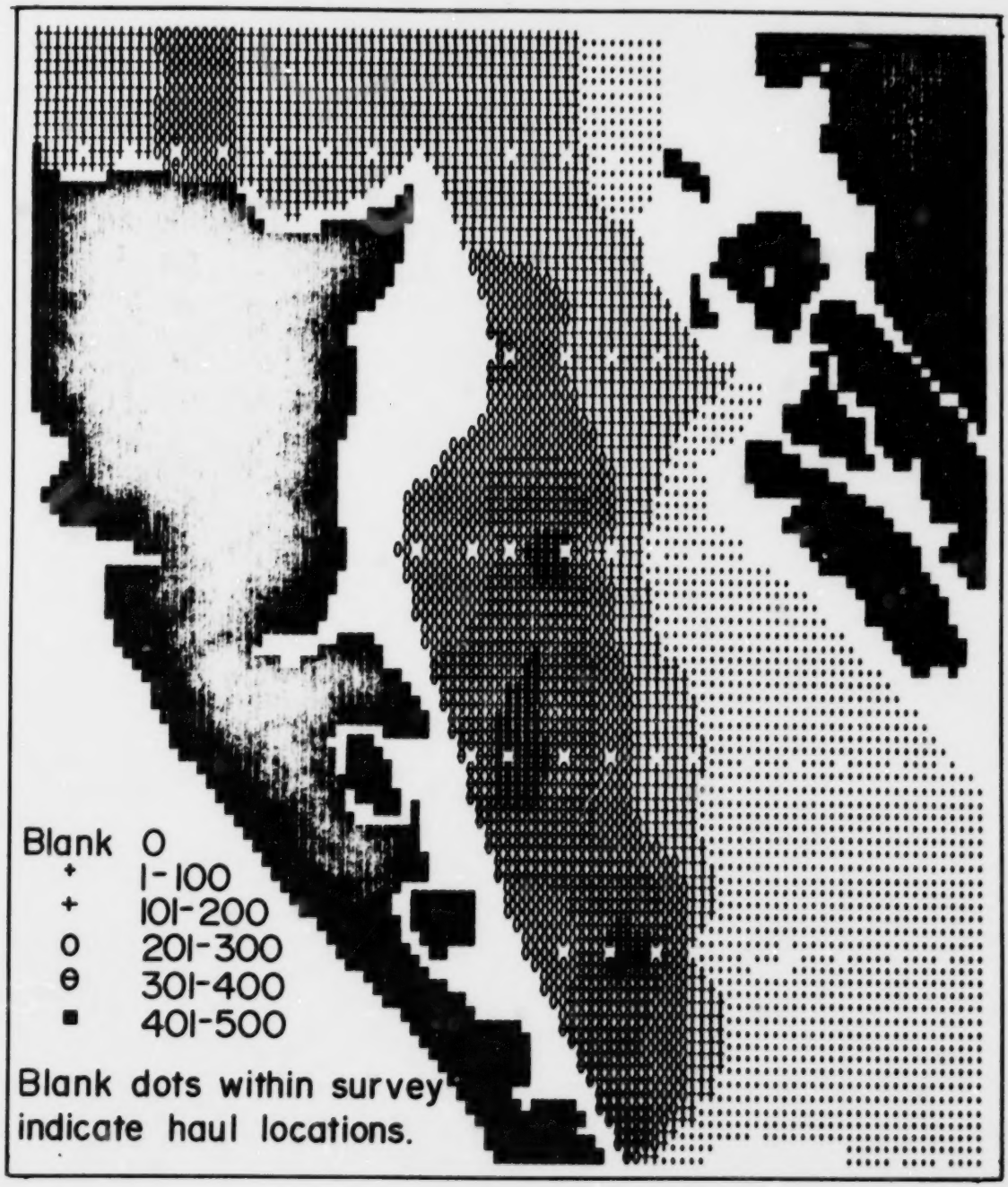


Fig. 6e. Distribution and relative abundance (number per 1000 hooks) of dogfish during IPHC August 1981 longline survey.

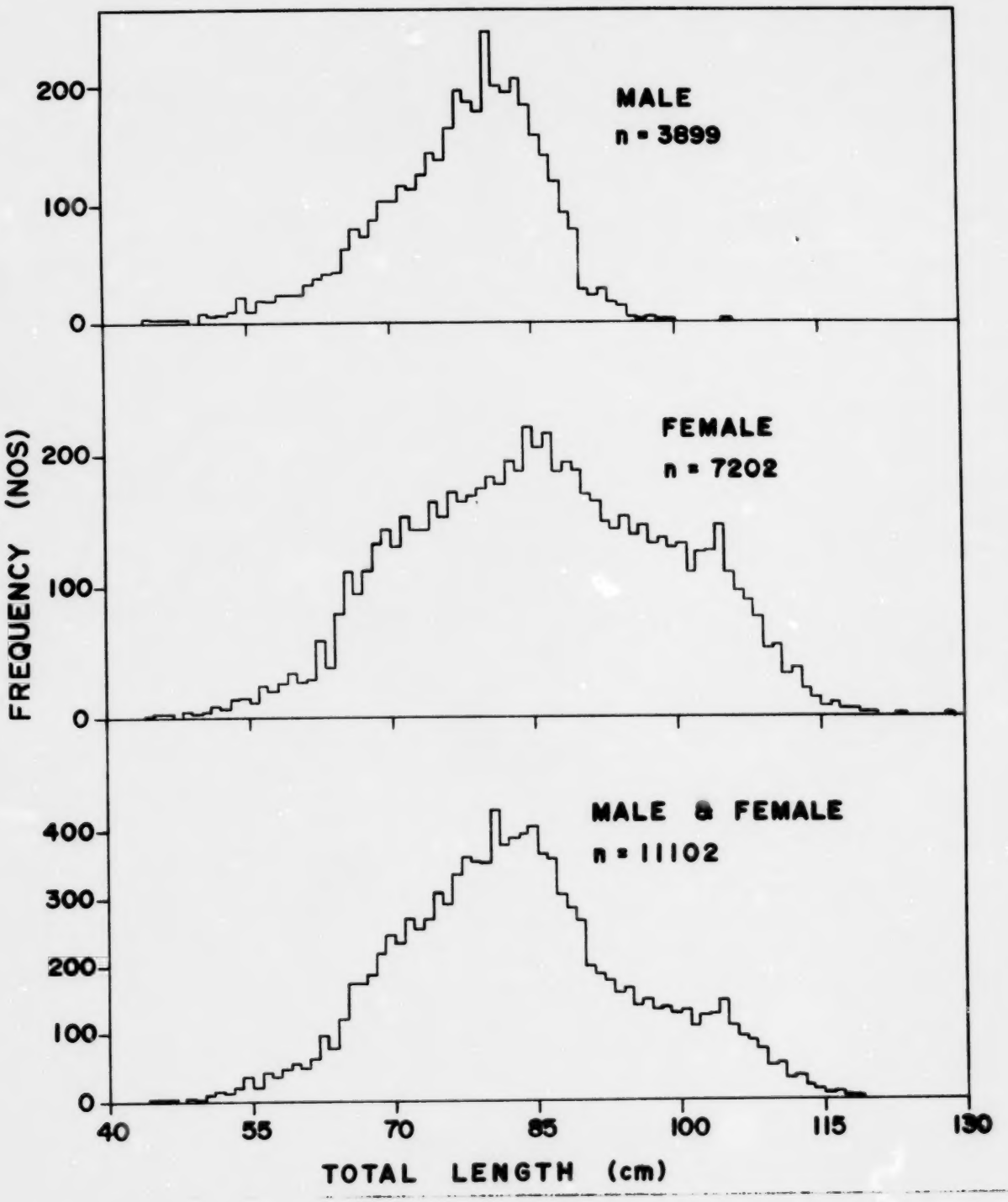


Fig. 7. Length frequency of dogfish for males, females and both sexes combined for all hauls, G.B. REED, Sept. 7-Oct. 1, 1982.

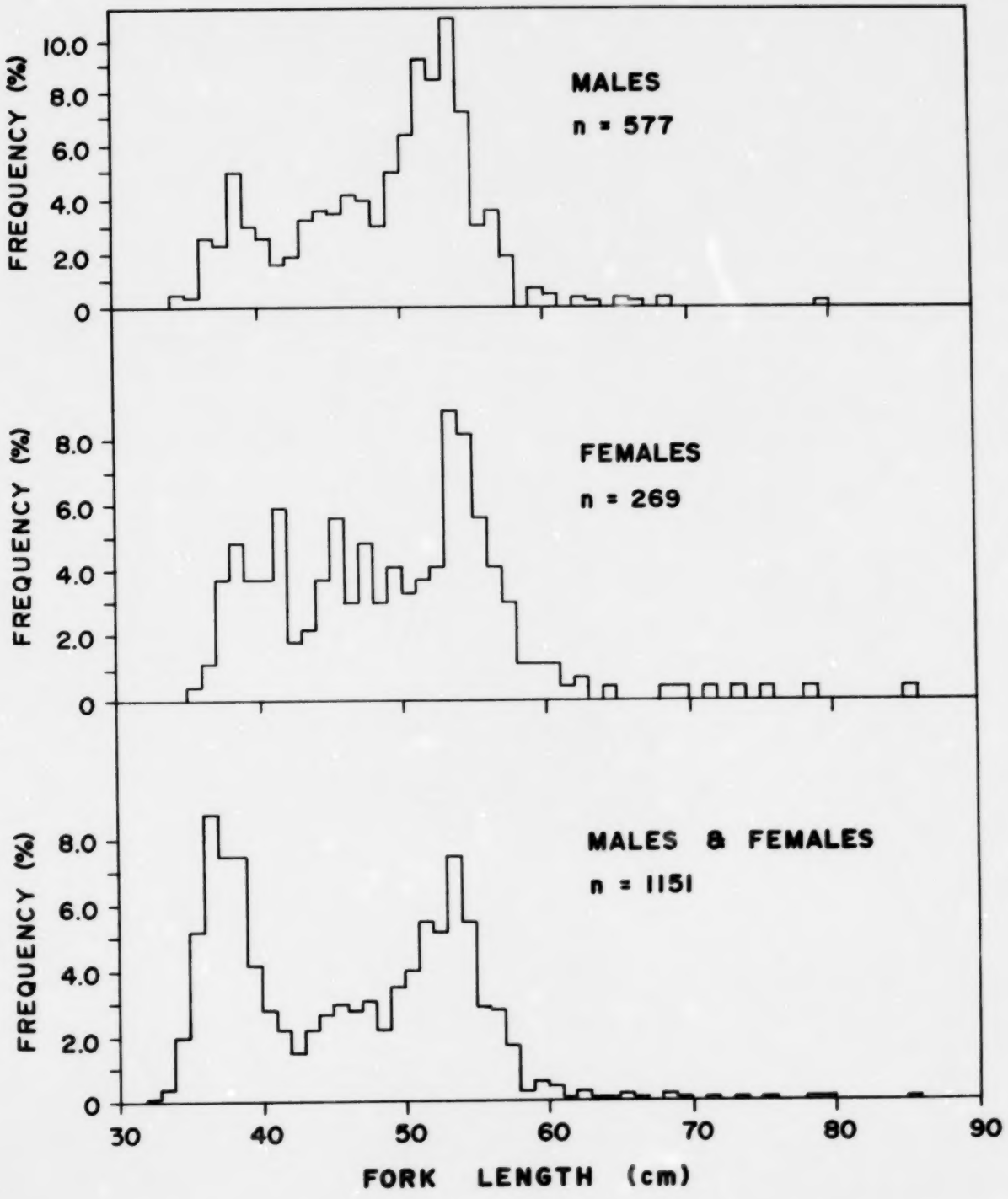


Fig. 8. Percent length-frequency of sablefish for males, females and both sexes combined for all hauls, G.B. REED Sept. 7-Oct. 1, 1982.

Appendix 1. Biomass estimation - methodology

For each stratum the mean catch per haul was calculated. The area of a given stratum was divided by the average area swept per haul to yield the number of hauls possible. Biomass of the stratum was the product of the number of hauls possible, the catching coefficient and the mean catch. The variance of the mean catch was calculated according to Cochran (1977) p. 95, where the variance S_h^2 is,

$$S_h^2 = \frac{1}{n_h - 1} \sum_{i=1}^{n_h} (y_{hi} - \bar{y}_h)^2$$

(Cochran 1977)

n_h - number of tows made in h^{+h} stratum

y_{hi} - catch obtained for the i^{th} tow

$\bar{y}_h$ - mean catch per tow for the h^{th} stratum.

Total biomass over all strata was the sum of the individual biomass estimates for each stratum. The ninety-five percent confidence limits for the total survey area were calculated as the product of the variance of the mean catch per haul over the entire survey $s^2(\bar{y}_{st})$ from (1) and the t-value from the Student-t distribution with the effective degrees of freedom (n_e) assigned using (2).

(1) $$s^2(\bar{y}_{st}) = \frac{1}{N^2} \sum_{h=1}^{L} N_L (N_h - n_h) \frac{S_h^2}{n_h}$$

(Cochran 1977)

(2) $$n_e = \frac{(\Sigma g_h s_h^2)^2}{\frac{\Sigma g^2 s_h^4}{n_{h-1}}}$$

where $$g = N_h\left(\frac{N_h - n_h}{n_h}\right)$$

(Cochran 1977)

N = standard tows possible in the entire set of strata

N_h = standard tows possible in the h^{th} stratum

L = number of stratum.

Appendix Table 1. Bridge log and species composition, by set for G.B. REED cruise, Sept 7 - Oct 1, 1982.

Haul no.	1		2	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 09		Sep 10	
Depth mode F/(m)	39 /(71)		103 /(188)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	15:15	15:45	8:25	8:55
Lat.(deg,min)	52 48	52 48	52 58	52 57
Long(deg,min)	130 49	130 46	130 22	130 22
LC-5990-X	12377.5	12388	12426.5	12431
LC-5990-Y	30382.5	30384.3	30430.8	30426.2
Depth (F)	37	41	104	101
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		131	
English sole	-		2	
Flathead sole	-		8	
Halibut	25		5	
Petrale sole	-		-	
Rex sole	-		6	
Rock sole	89		-	
Turbot	-		221	
Flatfish	8		-	
S. alutus	-		44	
S. babcocki	-		104	
S. brevispinis	-		6	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		23	
Lingcod	-		-	
Pacific cod	-		-	
Sablefish	-		252	
Walleye pollock	-		-	
Misc. species	-		-	
Dogfish	162		120	
Ratfish	4		-	
Skates	-		-	
Starfish	-		-	
Other invertebrates	34		trace	
Total catch (kg)	322		922	

Appendix Table 1 (cont'd)

Haul no.	3		4	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 10		Sep 10	
Depth mode F/(m)	68 /(124)		67 /(122)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:42	11:12	13:31	14:01
Lat.(deg,min)	53 00	52 58	52 58	52 57
Long(deg,min)	130 28	130 26	130 38	130 37
LC-5990-X	12384	12402	12350	12365.2
LC-5990-Y	30429.5	30426.1	30417.8	30415.6
Depth (F)	67	68	71	63

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	3	19
English sole	40	191
Flathead sole	trace	3
Halibut	16	-
Petrale sole	3	-
Rex sole	trace	45
Rock sole	-	-
Turbot	282	122
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	622	15
S. elongatus	-	-
S. flavidus	46	-
S. maliger	-	-
S. pinniger	329	-
S. proriger	-	-
Rockfish	6	-
Lingcod	-	-
Pacific cod	30	18
Sablefish	21	43
Walleye pollock	trace	7
Misc. species	-	-
Dogfish	88	66
Ratfish	trace	-
Skates	-	-
Starfish	-	-
Other invertebrates	trace	trace
Total catch (kg)	1486	529

Appendix Table 1 (cont'd)

Haul no.	5		6	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 10		Sep 11	
Depth mode F/(m)	41 /(74)		52 /(95)	
Duration (H)	0.15		0.50	
	Start	Stop	Start	Stop
Time	15:58	16:07	8:30	9:00
Lat.(deg,min)	52 58	52 58	53 19	53 17
Long(deg,min)	130 44	130 44	130 56	130 56
LC-5990-X	12329.6	12326.8	12128	12138.8
LC-5990-Y	30413	30412.8	30461	30457.4
Depth (F)	40	42	52	52
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		4	
English sole	-		268	
Flathead sole	-		-	
Halibut	-		44	
Petrale sole	-		-	
Rex sole	-		34	
Rock sole	-		7	
Turbot	-		12	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		-	
Pacific cod	-		30	
Sablefish	-		trace	
Walleye pollock	-		-	
Misc. species	-		-	
Dogfish	-		439	
Ratfish	-		11	
Skates	-		-	
Starfish	-		-	
Other invertebrates	-		9	
Total catch (kg)	0		858	

Appendix Table 1 (cont'd)

Haul no.	7		8	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 11		Sep 11	
Depth mode F/(m)	38 /(69)		23 /(42)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:27	10:57	12:27	12:57
Lat.(deg,min)	53 17	53 15	53 16	53 14
Long(deg,min)	131 02	131 01	131 06	131 05
LC-5990-X	12120.8	12135.2	12114.8	12128
LC-5990-Y	30452.2	30438.4	30446.4	30442.4
Depth (F)	38	38	22	23

Species catch (kg)

Dab (Pacific)	trace	trace
Dover sole	-	-
English sole	trace	-
Flathead sole	-	-
Halibut	32	17
Petrale sole	-	-
Rex sole	-	-
Rock sole	36	146
Turbot	trace	-
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	153	-
Pacific cod	-	-
Sablefish	-	-
Walleye pollock	-	-
Misc. species	-	-
Dogfish	90	85
Ratfish	-	-
Skates	16	23
Starfish	-	-
Other invertebrates	3	20
Total catch (kg)	330	291

Appendix Table 1 (cont'd)

Haul no.	9		10	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 11		Sep 11	
Depth mode F/(m)	30 /(54)		61 /(111)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	14:39	15:09	17:15	17:45
Lat.(deg,min)	53 23	53 21	53 23	53 21
Long(deg,min)	131 03	131 05	130 57	130 56
LC-5990-X	12074	12074.4	12098.4	12111.2
LC-5990-Y	30465.6	30461.2	30470	30465.6
Depth (F)	28	31	60	62
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		2	
English sole	-		84	
Flathead sole	-		-	
Halibut	31		-	
Petrale sole	-		-	
Rex sole	-		2	
Rock sole	54		-	
Turbot	-		110	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		72	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		68	
Pacific cod	-		112	
Sablefish	-		900	
Walleye pollock	-		75	
Misc. species	-		-	
Dogfish	1191		1004	
Ratfish	-		-	
Skates	47		-	
Starfish	-		-	
Other invertebrates	10		4	
Total catch (kg)	1333		2433	

Appendix Table 1 (cont'd)

Haul no.	11	12
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 12	Sep 12
Depth mode F/(m)	73 /(133)	59 /(107)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	8:28	8:58	10:21	10:51
Lat.(deg,min)	53 23	53 21	53 17	53 18
Long(deg,min)	130 54	130 53	130 54	130 54
LC-5990-X	12110	12122	12152	12139.2
LC-5990-Y	30471	30468.2	30457	30460.8
Depth (F)	73	73	57	60

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	235	27
English sole	-	42
Flathead sole	5	-
Halibut	trace	-
Petrale sole	-	3
Rex sole	62	76
Rock sole	-	3
Turbot	642	31
Flatfish	-	-
S. alutus	trace	-
S. babcocki	2	-
S. brevispinis	3	4
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	trace
Rockfish	8	-
Lingcod	15	6
Pacific cod	2	25
Sablefish	64	3
Walleye pollock	25	trace
Misc. species	-	-
Dogfish	322	436
Ratfish	8	1
Skates	trace	trace
Starfish	-	-
Other invertebrates	5	2
Total catch (kg)	1398	659

Appendix Table 1 (cont'd)

Haul no.	13		14	
Major area	5C		5D	
Minor area	2B East		5 upper	
Date	Sep 12		Sep 12	
Depth mode F/(m)	90 /(164)		56 /(102)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	12:47	13:17	15:46	16:16
Lat.(deg,min)	53 19	53 17	53 25	53 26
Long(deg,min)	130 46	130 45	130 57	130 56
LC-5990-X	12167.2	12183.2	12080.8	12087.2
LC-5990-Y	30467.2	30464.6	30475.2	30479.6
Depth (F)	88	92	56	55

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	371	35
English sole	-	121
Flathead sole	57	-
Halibut	-	-
Petrale sole	3	5
Rex sole	8	37
Rock sole	-	trace
Turbot	341	32
Flatfish	-	-
S. alutus	trace	-
S. babcocki	303	-
S. brevispinis	7	7
S. elongatus	-	trace
S. flavidus	-	-
S. maliger	-	trace
S. pinniger	-	-
S. proriger	-	trace
Rockfish	-	-
Lingcod	-	-
Pacific cod	2	2
Sablefish	410	5
Walleye pollock	-	trace
Misc. species	-	-
Dogfish	225	454
Ratfish	6	86
Skates	-	-
Starfish	-	-
Other invertebrates	10	trace
Total catch (kg)	1743	784

Appendix Table 1 (cont'd)

Haul no.	15		16	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 13		Sep 13	
Depth mode F/(m)	35 /(64)		50 /(91)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	11:08	11:38	13:39	14:09
Lat.(deg,min)	53 43	53 45	53 42	53 43
Long(deg,min)	130 52	130 54	130 48	130 48
LC-5990-X	11965.5	11937.5	11987.5	11974.5
LC-5990-Y	30520.4	30524.1	30521.6	30524.6
Depth (F)	35	35	45	56

Species catch (kg)

Dab (Pacific)	-	trace
Dover sole	-	3
English sole	trace	342
Flathead sole	-	-
Halibut	152	89
Petrale sole	8	6
Rex sole	-	2
Rock sole	136	1
Turbot	-	109
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	28
Pacific cod	-	48
Sablefish	-	195
Walleye pollock	-	63
Misc. species	-	6
Dogfish	106	394
Ratfish	4	2
Skates	-	-
Starfish	-	-
Other invertebrates	3	-
Total catch (kg)	409	1288

Appendix Table 1 (cont'd)

Haul no.	17	18
Major area	5D	5D
Minor area	5 upper	5 upper
Date	Sep 13	Sep 13
Depth mode F/(m)	77 /(140)	62 /(113)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	15:17	15:47	18:18	18:48
Lat.(deg,min)	53 43	53 44	53 41	53 43
Long(deg,min)	130 43	130 44	130 39	130 39
LC-5990-X	12002	11988	12027.2	12014.8
LC-5990-Y	30526.4	30527.6	30526.2	30530
Depth (F)	77	77	59	64

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	227	82
English sole	-	4
Flathead sole	-	4
Halibut	-	2
Petrale sole	trace	1
Rex sole	-	2
Rock sole	-	-
Turbot	1136	211
Flatfish	-	-
S. alutus	-	trace
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	trace
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	20
Pacific cod	-	21
Sablefish	3182	274
Walleye pollock	-	4
Misc. species	-	-
Dogfish	trace	293
Ratfish	-	2
Skates	-	23
Starfish	-	-
Other invertebrates	-	trace
Total catch (kg)	4545	943

Appendix Table 1 (cont'd)

Haul no.	19	20
Major area	5D	5D
Minor area	4	4
Date	Sep 14	Sep 14
Depth mode F/(m)	27 /(49)	52 /(95)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	8:29	8:59	10:34	11:04
Lat.(deg,min)	53 56	53 54	54 02	54 01
Long(deg,min)	131 06	131 06	131 03	131 04
LC-5990-X	11808	11821.5	11778	11765
LC-5990-Y	30536.2	30540	30550.6	30554.1
Depth (F)	25	28	51	52

Species catch (kg)

Dab (Pacific)	trace	-
Dover sole	-	11
English sole	1	67
Flathead sole	-	7
Halibut	94	11
Petrale sole	9	-
Rex sole	-	132
Rock sole	184	1
Turbot	-	474
Flatfish	3	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	9
S. elongatus	-	-
S. flavidus	-	-
S. maliger	2	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	1	-
Lingcod	-	10
Pacific cod	8	12
Sablefish	-	3
Walleye pollock	-	996
Misc. species	-	-
Dogfish	61	394
Ratfish	-	3
Skates	-	6
Starfish	-	-
Other invertebrates	trace	15
Total catch (kg)	363	2151

Appendix Table 1 (cont'd)

Haul no.	21		22	
Major area	5D		5D	
Minor area	4		4	
Date	Sep 14		Sep 14	
Depth mode F/(m)	31 /(56)		52 /(95)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	13:40	14:10	17:18	17:48
Lat.(deg,min)	54 02	54 01	54 05	54 07
Long(deg,min)	130 59	131 00	131 03	131 04
LC-5990-X	11781.5	11793	11741	11728.5
LC-5990-Y	30557	30557.2	30559.9	30562.6
Depth (F)	31	31	50	54

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	155
English sole	24	6
Flathead sole	trace	8
Halibut	31	20
Petrale sole	trace	-
Rex sole	-	88
Rock sole	37	-
Turbot	-	141
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	5
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	4
Pacific cod	6	4
Sablefish	44	3
Walleye pollock	-	221
Misc. species	-	1
Dogfish	41	185
Ratfish	718	11
Skates	-	-
Starfish	-	-
Other invertebrates	40	20
Total catch (kg)	941	872

Appendix Table 1 (cont'd)

Haul no.	23	24
Major area	5D	5D
Minor area	4	4
Date	Sep 15	Sep 15
Depth mode F/(m)	18 /(32)	27 /(49)
Duration (H)	0.37	0.50

	Start	Stop	Start	Stop
Time	8:25	8:47	10:08	10:38
Lat.(deg,min)	53 51	53 50	53 52	53 50
Long(deg,min)	131 13	131 12	131 09	131 09
LC-5990-X	11821	11834	0	0
LC-5990-Y	30525	30521.2	0	0
Depth (F)	19	16	28	26

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	-
English sole	trace	2
Flathead sole	-	-
Halibut	21	41
Petrale sole	-	-
Rex sole	-	-
Rock sole	67	90
Turbot	-	-
Flatfish	1	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	1	54
S. pinniger	-	-
S. proriger	-	-
Rockfish	1	-
Lingcod	-	5
Pacific cod	-	4
Sablefish	-	-
Walleye pollock	-	-
Misc. species	-	9
Dogfish	73	69
Ratfish	-	1
Skates	43	-
Starfish	-	-
Other invertebrates	33	274
Total catch (kg)	240	549

Appendix Table 1 (cont'd)

Haul no.	25	26
Major area	5D	5D
Minor area	4	4
Date	Sep 15	Sep 15
Depth mode F/(m)	42 /(76)	50 /(91)
Duration (H)	0.17	0.50

	Start	Stop	Start	Stop
Time	12:14	12:24	13:32	14:02
Lat.(deg,min)	53 54	53 54	53 51	53 51
Long(deg,min)	131 02	131 02	130 57	130 58
LC-5990-X	11834	11838	11886	11872
LC-5990-Y	30538.7	30537.6	30534.2	30535
Depth (F)	42	42	52	45

Species catch (kg)

Dab (Pacific)	4	-
Dover sole	trace	7
English sole	13	15
Flathead sole	-	trace
Halibut	7	1
Petrale sole	-	-
Rex sole	-	13
Rock sole	29	2
Turbot	17	65
Flatfish	1	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	7
S. elongatus	-	-
S. flavidus	-	-
S. maliger	2	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	1	-
Pacific cod	17	1
Sablefish	-	1
Walleye pollock	1	4
Misc. species	-	-
Dogfish	22	185
Ratfish	trace	-
Skates	-	2
Starfish	-	-
Other invertebrates	53	2
Total catch (kg)	167	305

Appendix Table 1 (cont'd)

Haul no.	27	28
Major area	5D	5D
Minor area	4	5 upper
Date	Sep 15	Sep 16
Depth mode F/(m)	50 /(91)	24 /(43)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	15:21	15:51	8:49	9:19
Lat.(deg,min)	53 51	53 52	53 39	53 38
Long(deg,min)	130 52	130 54	131 12	131 10
LC-5990-X	11899	11884	11117.2	11931.2
LC-5990-Y	30538.4	30539	30498	30496.4
Depth (F)	50	51	23	25

Species catch (kg)

Dab (Pacific)	-	trace
Dover sole	10	-
English sole	194	5
Flathead sole	2	-
Halibut	25	140
Petrale sole	-	-
Rex sole	trace	-
Rock sole	67	131
Turbot	125	-
Flatfish	-	1
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	3	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	-
Pacific cod	45	trace
Sablefish	189	-
Walleye pollock	trace	trace
Misc. species	-	3
Dogfish	617	431
Ratfish	-	-
Skates	24	224
Starfish	3	161
Other invertebrates	-	10
Total catch (kg)	1304	1106

Appendix Table 1 (cont'd)

Haul no.	29		30	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 16		Sep 16	
Depth mode F/(m)	33 /(60)		26 /(47)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:38	11:08	12:52	13:22
Lat.(deg,min)	53 36	53 35	53 36	53 37
Long(deg,min)	131 07	131 07	131 03	131 05
LC-5990-X	30491.4	11971.2	11969.2	11955.2
LC-5990-Y	30494.7	30491.4	30497.8	30499.2
Depth (F)	33	32	22	32

Species catch (kg)

Dab (Pacific)	trace	3
Dover sole	-	-
English sole	4	2
Flathead sole	trace	-
Halibut	52	117
Petrale sole	-	-
Rex sole	-	-
Rock sole	426	100
Turbot	-	-
Flatfish	1	1
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	3	-
Pacific cod	9	-
Sablefish	-	-
Walleye pollock	2	-
Misc. species	1	-
Dogfish	107	244
Ratfish	-	-
Skates	62	159
Starfish	47	92
Other invertebrates	43	2
Total catch (kg)	757	720

Appendix Table 1 (cont'd)

Haul no.	31		32	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 16		Sep 16	
Depth mode F/(m)	30 /(54)		48 /(87)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	14:58	15:28	17:06	17:36
Lat.(deg,min)	53 38	53 36	53 37	53 36
Long(deg,min)	130 51	130 52	130 47	130 47
LC-5990-X	12004	12014	12026.4	12040
LC-5990-Y	30510.2	30505.4	30511.3	30506.6
Depth (F)	30	31	48	49
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		409	
Flathead sole	-		-	
Halibut	21		59	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	67		-	
Turbot	-		207	
Flatfish	2		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		89	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		20	
Pacific cod	-		272	
Sablefish	-		89	
Walleye pollock	-		1030	
Misc. species	-		-	
Dogfish	49		6825	
Ratfish	-		-	
Skates	36		-	
Starfish	8		-	
Other invertebrates	7		-	
Total catch (kg)	190		9000	

Appendix Table 1 (cont'd)

Haul no	33		34	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 17		Sep 17	
Depth mode F/(m)	99 /(181)		57 /(104)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:33	11:03	12:58	13:28
Lat.(deg,min)	53 33	53 32	53 34	53 32
Long(deg,min)	130 43	130 43	130 47	130 47
LC-5990-X	12075.6	12087.2	12055.2	12064.8
LC-5990-Y	30503.6	30500.5	30502.2	30498.6
Depth (F)	97	100	56	57

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	66	-
English sole	4	279
Flathead sole	-	4
Halibut	15	24
Petrale sole	-	1
Rex sole	16	trace
Rock sole	-	1
Turbot	936	19
Flatfish	-	-
S. alutus	1	-
S. babcocki	4	-
S. brevispinis	2	5
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	2
Pacific cod	107	46
Sablefish	157	219
Walleye pollock	201	45
Misc. species	-	-
Dogfish	192	721
Ratfish	25	1
Skates	21	4
Starfish	-	-
Other invertebrates	3	2
Total catch (kg)	1750	1373

Appendix Table 1 (cont'd)

Haul no.	35	36
Major area	5D	5D
Minor area	5 upper	5 upper
Date	Sep 17	Sep 17
Depth mode F/(m)	34 /(62)	24 /(43)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	15:01	15:31	17:31	18:01
Lat.(deg,min)	53 34	53 33	53 34	53 34
Long(deg,min)	130 56	130 56	131 01	131 04
LC-5990-X	12014.4	12024	11998.8	11986.4
LC-5990-Y	30498.8	30494.3	30492	30492.5
Depth (F)	35	33	22	25

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	-
English sole	trace	-
Flathead sole	-	-
Halibut	125	84
Petrale sole	-	-
Rex sole	-	-
Rock sole	46	2
Turbot	-	-
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	3
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	5
Pacific cod	-	-
Sablefish	trace	-
Walleye pollock	-	-
Misc. species	-	-
Dogfish	397	253
Ratfish	-	-
Skates	-	87
Starfish	-	24
Other invertebrates	5	53
Total catch (kg)	573	511

Appendix Table 1 (cont'd)

Haul no.	37	38
Major area	5D	5D
Minor area	5 upper	5 upper
Date	Sep 18	Sep 18
Depth mode F/(m)	60 /(109)	58 /(106)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	9:25	9:55	10:53	11:23
Lat.(deg,min)	53 29	53 28	53 28	53 27
Long(deg,min)	130 48	130 49	130 52	130 53
LC-5990-X	12083.2	12089.2	12081.6	12079.2
LC-5990-Y	30490.9	30487	30485.4	30478
Depth (F)	57	62	58	58

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	trace	trace
English sole	86	244
Flathead sole	-	-
Halibut	4	13
Petrale sole	8	15
Rex sole	7	17
Rock sole	1	-
Turbot	3	17
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	2	149
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	-
Pacific cod	6	24
Sablefish	9	10
Walleye pollock	trace	5
Misc. species	-	-
Dogfish	394	551
Ratfish	1	-
Skates	trace	trace
Starfish	-	-
Other invertebrates	-	-
Total catch (kg)	521	1045

Appendix Table 1 (cont'd)

Haul no.	39	40
Major area	5D	5D
Minor area	5 upper	5 upper
Date	Sep 18	Sep 18
Depth mode F/(m)	43 /(78)	32 /(58)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	12:54	13:24	15:02	15:32
Lat.(deg,min)	53 33	53 31	53 27	53 26
Long(deg,min)	130 53	130 54	131 02	131 03
LC-5990-X	12036.8	12044	12044.4	12052.8
LC-5990-Y	30496.2	30492.8	30477	30472.5
Depth (F)	41	44	34	31

Species catch (kg)

Dab (Pacific)	41	-
Dover sole	-	-
English sole	120	1
Flathead sole	-	-
Halibut	44	49
Petrale sole	-	-
Rex sole	trace	-
Rock sole	482	8
Turbot	-	-
Flatfish	2	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	49
S. pinniger	-	10
S. proriger	-	-
Rockfish	-	2
Lingcod	2	10
Pacific cod	268	-
Sablefish	-	-
Walleye pollock	1	-
Misc. species	-	14
Dogfish	219	142
Ratfish	-	-
Skates	-	-
Starfish	-	5
Other invertebrates	3	30
Total catch (kg)	1182	320

Appendix Table 1 (cont'd)

Haul no.	41		42	
Major area	5D		5C	
Minor area	5 upper		2B East	
Date	Sep 18		Sep 19	
Depth mode F/(m)	26 /(47)		93 /(170)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	17:15	17:45	8:37	9:07
Lat.(deg,min)	53 28	53 26	53 14	53 12
Long(deg,min)	131 06	131 07	130 43	130 49
LC-5990-X	12027.2	12034.8	12218	12198.8
LC-5990-Y	30475.2	30471.4	30456.6	30453.3
Depth (F)	24	26	93	93
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		195	
English sole	-		trace	
Flathead sole	-		trace	
Halibut	158		-	
Petrale sole	-		-	
Rex sole	-		16	
Rock sole	182		-	
Turbot	-		98	
Flatfish	-		-	
S. alutus	-		1	
S. babcocki	-		788	
S. brevispinis	-		6	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	trace		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		12	
Lingcod	-		16	
Pacific cod	-		trace	
Sablefish	-		146	
Walleye pollock	-		9	
Misc. species	-		-	
Dogfish	171		56	
Ratfish	-		8	
Skates	440		14	
Starfish	-		2	
Other invertebrates	29		trace	
Total catch (kg)	980		1367	

Appendix Table 1 (cont'd)

Haul no.	43		44	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 19		Sep 19	
Depth mode F/(m)	61 /(111)		47 /(85)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:33	11:03	12:17	12:47
Lat.(deg,min)	53 13	53 12	53 13	53 12
Long(deg,min)	130 53	130 52	130 59	130 58
LC-5990-X	12118.8	12198.8	12161.6	12174.8
LC-5990-Y	30447.8	30443.1	30444.2	30441
Depth (F)	63	58	47	47
Species catch (kg)				
Dab (Pacific)	-		56	
Dover sole	2		-	
English sole	63		420	
Flathead sole	trace		-	
Halibut	8		12	
Petrale sole	1		6	
Rex sole	18		2	
Rock sole	-		34	
Turbot	16		trace	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	4		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	17		11	
Pacific cod	12		13	
Sablefish	-		-	
Walleye pollock	trace		trace	
Misc. species	-		-	
Dogfish	765		98	
Ratfish	2		-	
Skates	-		-	
Starfish	-		-	
Other invertebrates	trace		7	
Total catch (kg)	908		659	

Appendix Table 1 (cont'd)

Haul no.	45		46	
Major area	5C		5C	
Minor area	28 East		28 East	
Date	Sep 19		Sep 19	
Depth mode F/(m)	25 /(45)		23 /(42)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	13:49	14:19	15:19	15:49
Lat.(deg,min)	53 13	53 12	53 14	53 15
Long(deg,min)	131 04	131 03	131 09	131 10
LC-5990-X	12141.6	12154.4	12117.6	12112.4
LC-5990-Y	30440.8	30438.6	30438.4	30443.1
Depth (F)	24	28	24	22
Species catch (kg)				
Dab (Pacific)	-		5	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	3		23	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	5		57	
Turbot	-		-	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		2	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		1	
Lingcod	-		9	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	-		4	
Dogfish	101		567	
Ratfish	-		-	
Skates	21		19	
Starfish	-		-	
Other invertebrates	-		31	
Total catch (kg)	130		718	

Appendix Table 1 (cont'd)

Haul no.	47		48	
Major area	5C		5D	
Minor area	2B East		4	
Date	Sep 19		Sep 20	
Depth mode F/(m)	26 /(47)		50 /(91)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	17:20	17:50	8:30	9:00
Lat.(deg,min)	53 13	53 11	54 14	54 12
Long(deg,min)	131 03	131 02	131 03	131 04
LC-5990-X	12147.2	12160.8	11673	11684
LC-5990-Y	30440.2	30436.4	30577	30572.6
Depth (F)	26	25	51	48
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		43	
English sole	-		62	
Flathead sole	-		6	
Halibut	34		20	
Petrale sole	-		4	
Rex sole	-		124	
Rock sole	39		trace	
Turbot	-		378	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		-	
Pacific cod	-		18	
Sablefish	-		9	
Walleye pollock	-		22	
Misc. species	-		1	
Dogfish	237		165	
Ratfish	-		32	
Skates	44		64	
Starfish	27		199	
Other invertebrates	27		41	
Total catch (kg)	408		1188	

Appendix Table 1 (cont'd)

Haul no.	49		50	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 21		Sep 21	
Depth mode F/(m)	68 /(124)		37 /(67)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	12:21	12:51	14:18	14:48
Lat.(deg,min)	53 46	53 47	53 47	53 48
Long(deg,min)	130 49	130 50	130 57	130 57
LC-5990-X	11952	11935.5	11913	11901.1
LC-5990-Y	30529.8	30532.4	30526.1	30529.2
Depth (F)	67	71	37	37
Species catch (kg)				
Dab (Pacific)	-		5	
Dover sole	343		-	
English sole	trace		125	
Flathead sole	14		-	
Halibut	trace		128	
Petrale sole	-		4	
Rex sole	37		trace	
Rock sole	-		31	
Turbot	816		21	
Flatfish	-		4	
S. alutus	2		-	
S. babcocki	trace		-	
S. brevispinis	21		-	
S. elongatus	trace		-	
S. flavidus	-		-	
S. maliger	-		28	
S. pinniger	-		2	
S. proriger	-		-	
Rockfish	-		6	
Lingcod	-		-	
Pacific cod	2		124	
Sablefish	371		-	
Walleye pollock	9		-	
Misc. species	-		7	
Dogfish	89		454	
Ratfish	2		trace	
Skates	20		14	
Starfish	trace		trace	
Other invertebrates	trace		10	
Total catch (kg)	1726		963	

Appendix Table 1 (cont'd)

Haul no.	51		52	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 21		Sep 21	
Depth mode F/(m)	31 /(56)		28 /(51)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	15:44	16:14	17:32	18:02
Lat.(deg,min)	53 47	53 49	53 48	53 46
Long(deg,min)	131 02	131 03	131 07	131 06
LC-5990-X	11894	11878	11872.6	11866.5
LC-5990-Y	30523	30529.2	30520.4	30523.4
Depth (F)	24	33	28	27
Species catch (kg)				
Dab (Pacific)	18		-	
Dover sole	-		-	
English sole	15		trace	
Flathead sole	trace		-	
Halibut	77		80	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	80		42	
Turbot	-		-	
Flatfish	1		1	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	12		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	2		-	
Lingcod	5		-	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	2		-	
Dogfish	166		289	
Ratfish	-		-	
Skates	38		13	
Starfish	-		10	
Other invertebrates	24		14	
Total catch (kg)	440		449	

Appendix Table 1 (cont'd)

Haul no.	53	54
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 22	Sep 22
Depth mode F/(m)	21 /(38)	26 /(47)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	8:19	8:49	9:41	10:11
Lat.(deg,min)	53 08	53 07	53 08	53 06
Long(deg,min)	131 07	131 07	131 02	131 03
LC-5990-X	12160.8	12168	12190.8	12196.8
LC-5990-Y	30426.6	30424.2	30426.1	30426.4
Depth (F)	22	19	26	26

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	-
English sole	-	-
Flathead sole	-	-
Halibut	18	67
Petrale sole	-	-
Rex sole	-	-
Rock sole	10	38
Turbot	-	-
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	2	13
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	22
Pacific cod	-	-
Sablefish	-	-
Walleye pollock	-	-
Misc. species	3	1
Dogfish	813	311
Ratfish	-	-
Skates	52	27
Starfish	-	-
Other invertebrates	22	29
Total catch (kg)	920	508

Appendix Table 1 (cont'd)

Haul no.	55		56	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 22		Sep 22	
Depth mode F/(m)	37 /(67)		55 /(100)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	10:51	11:21	12:26	12:56
Lat.(deg,min)	53 07	53 06	53 06	53 06
Long(deg,min)	130 58	130 58	130 53	130 52
LC-5990-X	12203.6	12214	12233.2	12238.8
LC-5990-Y	30429.8	30426.3	30430	30429.2
Depth (F)	36	38	54	56
Species catch (kg)				
Dab (Pacific)	4		-	
Dover sole	-		-	
English sole	43		111	
Flathead sole	-		-	
Halibut	61		19	
Petrale sole	2		3	
Rex sole	-		3	
Rock sole	326		-	
Turbot	-		6	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	5		-	
S. pinniger	trace		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	20		21	
Pacific cod	-		46	
Sablefish	-		-	
Walleye pollock	-		3	
Misc. species	4		-	
Dogfish	284		187	
Ratfish	-		8	
Skates	5		-	
Starfish	-		trace	
Other invertebrates	61		trace	
Total catch (kg)	815		407	

Appendix Table 1 (cont'd)

Haul no.	57	58
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 22	Sep 22
Depth mode F/(m)	68 /(124)	76 /(138)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	13:43	14:13	18:03	18:33
Lat.(deg,min)	53 08	53 06	53 08	53 06
Long(deg,min)	130 48	130 48	130 44	130 42
LC-5990-X	12244	12252	12260	12275.6
LC-5990-Y	30437	30434	30439.2	30437.8
Depth (F)	68	69	76	75

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	2	14
English sole	3	5
Flathead sole	trace	-
Halibut	3	46
Petrale sole	-	-
Rex sole	5	25
Rock sole	-	-
Turbot	124	574
Flatfish	-	-
S. alutus	-	4
S. babcocki	-	5
S. brevispinis	8	9
S. elongatus	-	trace
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	23	-
Pacific cod	61	28
Sablefish	-	8
Walleye pollock	-	11
Misc. species	-	-
Dogfish	273	452
Ratfish	3	5
Skates	-	-
Starfish	-	-
Other invertebrates	8	-
Total catch (kg)	513	1186

Appendix Table 1 (cont'd)

	59	60
Haul no.	59	60
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 23	Sep 23
Depth mode F/(m)	19 /(34)	29 /(53)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	8:27	8:57	10:18	10:48
Lat.(deg,min)	53 02	53 03	53 03	53 03
Long(deg,min)	131 06	131 08	131 01	131 03
LC-5990-X	12211.2	12195.2	12224.4	12213.2
LC-5990-Y	30410.9	30413.1	30416.6	30416
Depth (F)	18	20	29	29

Species catch (kg)

Dab (Pacific)	-	36
Dover sole	-	-
English sole	-	3
Flathead sole	-	-
Halibut	3	41
Petrale sole	-	-
Rex sole	-	-
Rock sole	76	22
Turbot	-	-
Flatfish	2	18
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	61
Pacific cod	-	-
Sablefish	-	trace
Walleye pollock	-	-
Misc. species	-	-
Dogfish	573	230
Ratfish	-	-
Skates	56	93
Starfish	-	-
Other invertebrates	45	14
Total catch (kg)	755	518

Appendix Table 1 (cont'd)

Haul no.	61		62	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 23		Sep 23	
Depth mode F/(m)	27 /(49)		36 /(65)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	12:29	12:59	14:01	14:31
Lat.(deg,min)	53 03	53 03	53 03	53 05
Long(deg,min)	130 55	130 58	130 53	130 54
LC-5990-X	12246	12236.4	12245.2	12236.4
LC-5990-Y	30420	30418.9	30422	30425.2
Depth (F)	27	27	35	37

Species catch (kg)

Dab (Pacific)	3	2
Dover sole	-	-
English sole	-	4
Flathead sole	-	-
Halibut	9	66
Petrale sole	-	trace
Rex sole	-	-
Rock sole	24	218
Turbot	-	-
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	6	33
Pacific cod	-	-
Sablefish	-	-
Walleye pollock	-	-
Misc. species	-	-
Dogfish	62	146
Ratfish	-	-
Skates	9	18
Starfish	67	-
Other invertebrates	trace	6
Total catch (kg)	180	493

Appendix Table 1 (cont'd)

Haul no.	63	64
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 23	Sep 23
Depth mode F/(m)	53 /(96)	65 /(118)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	15:37	16:07	17:21	17:51
Lat.(deg,min)	53 00	53 01	53 02	53 04
Long(deg,min)	130 47	130 48	130 42	130 43
LC-5990-X	12299.2	12286.4	12306	12291.2
LC-5990-Y	30419	30420.4	30427.2	30429.4
Depth (F)	53	52	64	67

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	trace
English sole	172	350
Flathead sole	trace	trace
Halibut	-	-
Petrale sole	trace	trace
Rex sole	21	23
Rock sole	trace	-
Turbot	1	47
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	trace
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	4	-
Pacific cod	47	-
Sablefish	-	trace
Walleye pollock	-	-
Misc. species	-	-
Dogfish	156	134
Ratfish	trace	trace
Skates	-	-
Starfish	5	trace
Other invertebrates	-	-
Total catch (kg)	406	554

Appendix Table 1 (cont'd)

Haul no.	65		66	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 24		Sep 24	
Depth mode F/(m)	42 /(76)		56 /(102)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	8:50	9:20	10:12	10:42
Lat.(deg,min)	52 59	52 58	52 59	52 59
Long(deg,min)	130 48	130 46	130 44	130 42
LC-5990-X	12307.2	12322	12320.8	12335.6
LC-5990-Y	30413	30411	30417.8	30416.6
Depth (F)	43	40	56	56
Species catch (kg)				
Dab (Pacific)	16		-	
Dover sole	trace		trace	
English sole	310		301	
Flathead sole	-		-	
Halibut	54		2	
Petrale sole	4		-	
Rex sole	11		27	
Rock sole	2		-	
Turbot	1		1	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	11		19	
Pacific cod	63		504	
Sablefish	-		-	
Walleye pollock	1		trace	
Misc. species	-		-	
Dogfish	123		103	
Ratfish	-		trace	
Skates	9		-	
Starfish	-		-	
Other invertebrates	-		-	
Total catch (kg)	605		957	

Appendix Table 1 (cont'd)

Haul no.	67		68	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 24		Sep 24	
Depth mode F/(m)	56 /(102)		60 /(109)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	12:28	12:58	14:28	14:58
Lat.(deg,min)	52 58	52 57	53 05	53 04
Long(deg,min)	130 31	130 31	130 38	130 37
LC-5990-X	12380.4	12388.4	12306	12318.4
LC-5990-Y	30423.4	30419.6	30435.1	30433.8
Depth (F)	57	56	61	59
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	88		236	
Flathead sole	-		-	
Halibut	9		42	
Petrale sole	28		66	
Rex sole	12		2	
Rock sole	1		trace	
Turbot	4		13	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	227		75	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		3	
Pacific cod	-		-	
Sablefish	-		trace	
Walleye pollock	-		-	
Misc. species	-		-	
Dogfish	176		795	
Ratfish	-		trace	
Skates	3		-	
Starfish	-		-	
Other invertebrates	-		-	
Total catch (kg)	548		1232	

Appendix Table 1 (cont'd)

Haul no.	69	70
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 24	Sep 24
Depth mode F/(m)	63 /(115)	95 /(173)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	17:09	17:39	18:37	19:07
Lat.(deg,min)	53 02	53 01	53 02	53 01
Long(deg,min)	130 32	130 31	130 27	130 26
LC-5990-X	12351.2	12360.8	12372.4	12385.6
LC-5990-Y	30432.4	30430.2	30437.4	30434
Depth (F)	62	64	96	93

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	165
English sole	79	-
Flathead sole	-	36
Halibut	19	-
Petrale sole	4	-
Rex sole	23	10
Rock sole	-	-
Turbot	-	133
Flatfish	-	-
S. alutus	-	90
S. babcocki	-	41
S. brevispinis	16	11
S. elongatus	-	-
S. flavidus	-	-
S. maliger	-	-
S. pinniger	-	-
S. proriger	-	-
Rockfish	-	-
Lingcod	-	-
Pacific cod	7	24
Sablefish	-	21
Walleye pollock	-	-
Misc. species	-	-
Dogfish	189	200
Ratfish	-	8
Skates	-	15
Starfish	-	-
Other invertebrates	-	-
Total catch (kg)	337	754

Appendix Table 1 (cont'd)

Haul no.	71		72	
Major area	5C		5C	
Minor area	28 East		28 East	
Date	Sep 25		Sep 25	
Depth mode F/(m)	18 /(32)		23 /(42)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	8:53	9:23	10:36	11:06
Lat.(deg,min)	52 52	52 50	52 54	52 53
Long(deg,min)	130 57	130 57	130 51	130 52
LC-5990-X	12322	12330.5	12327.5	12336
LC-5990-Y	30388	30383	30398.2	30393
Depth (F)	18	18	25	21
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	40		34	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	17		4	
Turbot	trace		-	
Flatfish	-		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		-	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	23		-	
Dogfish	1685		186	
Ratfish	-		-	
Skates	48		60	
Starfish	-		14	
Other invertebrates	32		-	
Total catch (kg)	1845		298	

Appendix Table 1 (cont'd)

Haul no.	73		74	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 25		Sep 25	
Depth mode F/(m)	22 /(40)		25 /(45)	
Duration (H)	0.50		0.12	
	Start	Stop	Start	Stop
Time	12:22	12:52	14:17	14:24
Lat.(deg,min)	52 54	52 52	52 54	52 54
Long(deg,min)	130 51	130 52	130 47	130 47
LC-5990-X	12326.5	12334	12345	12345
LC-5990-Y	30398.6	30392.8	30401.2	30400.4
Depth (F)	23	20	25	24
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	-		-	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	8		trace	
Turbot	-		-	
Flatfish	1		-	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		4	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	4		-	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	-		1	
Dogfish	420		44	
Ratfish	-		-	
Skates	72		103	
Starfish	-		2	
Other invertebrates	13		-	
Total catch (kg)	518		154	

Appendix Table 1 (cont'd)

Haul no.	75	76
Major area	5C	5C
Minor area	2B East	2B East
Date	Sep 25	Sep 26
Depth mode F/(m)	36 /(65)	64 /(117)
Duration (H)	0.50	0.50

	Start	Stop	Start	Stop
Time	18:37	19:07	8:55	9:25
Lat.(deg,min)	52 52	52 51	52 49	52 48
Long(deg,min)	130 42	130 44	130 36	130 37
LC-5990-X	12376.5	12380	12426.5	12427.5
LC-5990-Y	30308.2	30304.2	30393.7	30388.6
Depth (F)	37	34	64	64

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	-
English sole	-	76
Flathead sole	-	trace
Halibut	98	4
Petrale sole	-	10
Rex sole	-	-
Rock sole	88	7
Turbot	-	4
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	trace	trace
S. elongatus	-	-
S. flavidus	-	-
S. maliger	64	-
S. pinniger	1	-
S. proriger	-	-
Rockfish	3	-
Lingcod	23	-
Pacific cod	-	4
Sablefish	-	trace
Walleye pollock	-	trace
Misc. species	15	-
Dogfish	94	125
Ratfish	33	trace
Skates	286	-
Starfish	-	trace
Other invertebrates	36	trace
Total catch (kg)	741	230

Appendix Table 1 (cont'd)

Haul no.	77		78	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 26		Sep 26	
Depth mode F/(m)	33 /(60)		27 /(49)	
Duration (H)	0.50		0.33	
	Start	Stop	Start	Stop
Time	12:11	12:41	15:47	16:07
Lat.(deg,min)	52 47	52 46	52 51	52 51
Long(deg,min)	130 52	130 53	131 14	131 15
LC-5990-X	12371	12370	12258.5	12256.5
LC-5990-Y	30377.5	30374.4	30376.2	30373.9
Depth (F)	32	34	33	38
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	23		23	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	46		158	
Turbot	-		-	
Flatfish	-		1	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	1		65	
S. pinniger	2		201	
S. proriger	-		-	
Rockfish	-		1	
Lingcod	30		5	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	-		2	
Dogfish	612		101	
Ratfish	-		-	
Skates	142		55	
Starfish	-		-	
Other invertebrates	48		32	
Total catch (kg)	904		645	

Appendix Table 1 (cont'd)

Haul no.	79		80	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 27		Sep 27	
Depth mode F/(m)	14 /(25)		18 /(32)	
Duration (H)	0.55		0.50	
	Start	Stop	Start	Stop
Time	8:55	9:28	10:23	10:53
Lat.(deg,min)	53 33	53 31	53 32	53 30
Long(deg,min)	131 16	131 17	131 12	131 12
LC-5990-X	11950.5	11960.5	11969.5	11982
LC-5990-Y	30481.4	30477.3	30482.2	30478.3
Depth (F)	13	15	16	20
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	10		6	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	-		17	
Turbot	-		-	
Flatfish	4		4	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		-	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	-		-	
Dogfish	1117		496	
Ratfish	-		-	
Skates	225		124	
Starfish	-		-	
Other invertebrates	1		64	
Total catch (kg)	1357		711	

Appendix Table 1 (cont'd)

Haul no.	81		82	
Major area	5D		5D	
Minor area	5 upper		5 upper	
Date	Sep 27		Sep 27	
Depth mode F/(m)	15 /(27)		12 /(21)	
Duration (H)	0.50		0.50	
	Start	Stop	Start	Stop
Time	12:39	13:09	14:25	14:55
Lat.(deg,min)	53 29	53 27	53 33	53 31
Long(deg,min)	131 21	131 21	131 24	131 24
LC-5990-X	11962.5	11975	11923.5	11935
LC-5990-Y	30468.5	30464.5	30476.1	30472.8
Depth (F)	16	15	14	13
Species catch (kg)				
Dab (Pacific)	-		-	
Dover sole	-		-	
English sole	-		-	
Flathead sole	-		-	
Halibut	24		142	
Petrale sole	-		-	
Rex sole	-		-	
Rock sole	4		13	
Turbot	-		-	
Flatfish	5		9	
S. alutus	-		-	
S. babcocki	-		-	
S. brevispinis	-		-	
S. elongatus	-		-	
S. flavidus	-		-	
S. maliger	-		-	
S. pinniger	-		-	
S. proriger	-		-	
Rockfish	-		-	
Lingcod	-		-	
Pacific cod	-		-	
Sablefish	-		-	
Walleye pollock	-		-	
Misc. species	-		5	
Dogfish	370		544	
Ratfish	-		-	
Skates	216		141	
Starfish	16		99	
Other invertebrates	1		19	
Total catch (kg)	636		972	

Appendix Table 1 (cont'd)

Haul no.	83		84	
Major area	5C		5C	
Minor area	2B East		2B East	
Date	Sep 29		Sep 29	
Depth mode F/(m)	17 /(31)		15 /(27)	
Duration (H)	0.22		0.50	
	Start	Stop	Start	Stop
Time	8:27	8:40	9:57	10:27
Lat.(deg,min)	52 53	52 52	52 52	52 51
Long(deg,min)	131 03	131 03	131 08	131 08
LC-5990-X	12289.5	12294	12273	12283.2
LC-5990-Y	30387.2	30385.4	30382.4	30378
Depth (F)	18	16	14	15

Species catch (kg)

Dab (Pacific)	-	-
Dover sole	-	-
English sole	-	-
Flathead sole	-	-
Halibut	-	-
Petrale sole	-	-
Rex sole	-	-
Rock sole	-	-
Turbot	-	-
Flatfish	-	-
S. alutus	-	-
S. babcocki	-	-
S. brevispinis	-	-
S. elongatus	-	-
S. flavidus	-	-
S. maliger	10	3
S. pinniger	-	-
S. proriger	-	-
Rockfish	46	100
Lingcod	-	-
Pacific cod	-	-
Sablefish	-	-
Walleye pollock	-	-
Misc. species	-	-
Dogfish	360	693
Ratfish	-	-
Skates	-	2
Starfish	-	-
Other invertebrates	32	18
Total catch (kg)	448	816

Appendix Table 1 (cont'd)

Haul no.	85
Major area	5C
Minor area	2B East
Date	Sep 29
Depth mode F/(m)	15 /(27)
Duration (H)	0.23

	Start	Stop
Time	12:16	12:30
Lat.(deg,min)	52 50	52 49
Long(deg,min)	131 08	131 08
LC-5990-X	12291	12294
LC-5990-Y	30375.5	30373.8
Depth (F)	15	15

Species catch (kg)

Dab (Pacific)	-
Dover sole	-
English sole	-
Flathead sole	-
Halibut	-
Petrale sole	-
Rex sole	-
Rock sole	-
Turbot	-
Flatfish	-
S. alutus	-
S. babcocki	-
S. brevispinis	-
S. elongatus	-
S. flavidus	-
S. maliger	1
S. pinniger	-
S. proriger	-
Rockfish	20
Lingcod	-
Pacific cod	-
Sablefish	-
Walleye pollock	-
Misc. species	-
Dogfish	222
Ratfish	-
Skates	-
Starfish	-
Other invertebrates	-
Total catch (kg)	243

Appendix Table 2. Dogfish development and maturity stages.

Stage	Ovaries	Stage	Uterii
	Females		
I_1	Ova small - 0-5 mm diameter; white firm ovary <1/4 length of body cavity.	D_1	Thin, no thickening.
		D_2	Thin, <5 mm thickened section, <1/4 length of body cavity.
R_1	Ova - 5-1 mm, white firm, ovary flaccid, flocculent external surface.	D_3	About 5 mm thickened section; <1/4 length of body cavity.
R_2	Ova, flaccid yellow, flaccid diameter 10-30 mm.	D_4	Thickened section at least 10 mm or wider, flaccid; >1/3 length of body cavity.
R_3	Ova at least two sizes white firm <20 mm and yellow firm >20 mm; ovary flaccid 1/4 to 1/3 length of body cavity.	D_5	Uterine eggs.
		D_6	Yolk sac pups.
		D_7	Term pups (yolk sac absorbed).
		D_8	Flaccid.
Resting	Ova small white firm. <10 mm, ovary flaccid fibrous exterior granular surface.		

Males

I_1	Claspers do not extend past tips of anal fins; testes flat creamy.
I_2	Claspers extend past tips of anal fins; not stiff; testes, even creamy colour, not brown.
R	Claspers extend past tips of anal fins; stiff; testes, creamy-brown bloodshot, very firm.

Appendix Table 3. Scientific and common names of fishes and invertebrates caught during G.B. REED cruise, Sept 7-Oct 1, 1982.

Common name	Scientific name
Flatfish	
Butter sole	*Isopsetta isolepis*
C-O sole	*Pleuronichthys coenosus*
Curlfin sole	*Pleuronichthys decurrens*
Dover sole	*Microstomus pacificus*
English sole	*Parophrys vetulus*
Flathead sole	*Hippoglossoides elassodon*
Halibut	*Hippoglossus stenolepis*
Petrale sole	*Eopsetta jordani*
Rex sole	*Glyptocephalus zachirus*
Rock sole	*Lepidopsetta bilineata*
Sanddab	*Citharichthys* sp.
Sand sole	*Psettichthys melanostictus*
Starry flounder	*Platichthys stellatus*
Turbot	*Atheresthes stomias*
Rockfish	
Bocaccio	*Sebastes paucispinis*
Canary rockfish	*S. pinniger*
China rockfish	*S. nebulosus*
Copper rockfish	*S. caurinus*
Dark blotched rockfish	*S. crameri*
Greenstriped rockfish	*S. elongatus*
Idiot rockfish	*S. alascanus*
Pacific ocean perch	*S. alutus*
Quillback rockfish	*S. maliger*
Redbanded rockfish	*S. babcocki*
Red snapper	*S. ruberrimus*
Redstripe rockfish	*S. proriger*
Sharpchin rockfish	*S. zacentrus*
Silvergray rockfish	*S. brevispinus*
Yellowtail rockfish	*S. flavidus*
Roundfish	
Sablefish	*Anoplopoma fimbria*
Greenlings	*Hexagrammos* sp.
Lingcod	*Ophiodon elongatus*
Pacific cod	*Gadus macrocephalus*
Pollock	*Theragra chalcogramma*

Appendix Table 3 (cont'd)

Common name	Scientific name
Salmonidae	
Chum salmon	Oncorhynchus keta
Spring salmon	Oncorhynchus tshawytscha
Misc Fish Sp.	
Eulachon	Thaleichthys pacificus
Herring	Clupea harengus pallasi
Sculpins	Cottidae sp.
Shiner perch	Cymatogaster aggregata
Sturgeon poacher	Agonus acipenserinus
Tom cod	Microgadus proximus
Wolfeel	Anarhichthys ocellatus
Selachii	
Big skate	Raja binoculata
Dogfish	Squalus acantnias
Longnose skate	Raja rhina
Ratfish	Hydrolagus colliei
Soupfin shark	Galeorhinus zyopterus
Invertebrates	
Basket star	Gorgonocephalus eucnemis
Box crab	Family Lithodidae
Dungeness crab	Cancer magister
Giant barnacle	Balanus nubilus
Hermit crab	Pagurus sp.
Jellyfish	Cyanea capillata
Octopus	Octopus sp.
Prawn	Pandalus platycerous
Purple sea urchin	Strongylocentrotus franciscanus
Red rock crab	Cancer productus
Scallop	Chlamys hastata hericia
Sea cucumber	Parastichopus californicus
Sea pen	Ptilosarcsus gurneiy
Shrimp	Order Natantia
Squid	Loligo opalescens
Starfish	Pisaster sp.
Sunflower star	Pycnopodia helianthoides

Appendix Table 4. Locations of hydrographic stations occupied during G.B. REED cruise, Sept 7-Oct 1, 1982.

Station no.	Date	Time	Position		Depth (m)
			Latitude	Longitude	
1	8	1445	51°00.5'	128°19.7'	82
2	8	1633	51°15.0'	128°40.3'	201
5	8	1723	51°24.2'	128°42.4'	223
D	8	1825	51°31.0'	128°56.9'	46
C	8	1945	51°41.4'	129°10.9'	55
B	8	2025	51°47.2'	129°16.3'	117
A	8	2103	51°52.3'	129°22.9'	227
13	8	2152	51°59.9'	129°29.9'	209
17	9	0057	52°19.8'	130°12.8'	384
18	9	0143	52°29.0'	130°08.8'	295
21	9	1935	52°59.4'	130°12.8'	229
41	10	2000	53°12.5'	131°06.5'	42
23	11	2128	53°15.4'	130°40.5'	196
40	12	1830	53°28.0'	131°08.6'	35
25	13	2008	53°42.5'	130°45.1'	132
26	13	2123	53°50.2'	130°55.0'	93
28A	14	1835	54°08.5'	131°03.4'	110
30	14	2020	54°19.7'	131°05.5'	106
30A	14	2135	54°22.5'	131°15.0'	99
33	14	2215	54°24.5'	131°22.9'	269
34	14	2243	54°21.5'	131°24.0'	192
5	14	2301	54°18.6'	131°24.9'	137
36	14	2322	54°15.7'	131°26.2'	40
37	15	0034	54°06.2'	131°19.7'	33
38	15	0155	53°55.0'	131°16.5'	33
39	15	1830	53°41.5'	131°13.0'	37
24	17	2200	53°28.5'	130°47.0'	163
27	19	2319	53°58.7'	131°03.0'	77
42	28	1056	53°01.0'	131°06.5'	31
44	29	1533	52°34.0'	130°53.0'	144
45	29	1656	52°19.9'	130°45.8'	141
46	29	1809	52°07.7'	130°39.0'	214
15	29	1907	52°00.0'	130°31.0'	412
10	29	2228	51°36.0'	130°02.5'	338
9	30	0026	51°21.5'	129°48.4'	239
8	30	0215	51°06.8'	129°37.4'	402

Appendix Table 5. Dogfish length frequencies by haul and sex for G.B. REED cruise, Sept 7-Oct 1, 1982.

Haul no.	1			2			3			4		
Total length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	1	1	-	-	-	-	-	-
60	-	-	-	-	0	0	-	-	-	-	-	-
61	-	-	-	-	0	0	-	-	-	-	-	-
62	-	-	-	-	0	0	-	-	-	-	-	-
63	-	-	-	-	0	0	-	-	-	-	-	-
64	-	-	-	-	0	0	-	-	-	-	-	-
65	-	-	-	-	0	0	-	-	-	-	-	-
66	1	-	1	-	0	0	-	-	-	1	-	1
67	0	-	0	-	0	0	-	-	-	1	-	1
68	0	-	0	-	0	0	-	-	-	0	-	0
69	0	-	0	-	0	0	-	-	-	0	-	0
70	0	-	0	-	0	0	-	-	-	1	-	1
71	1	-	1	-	0	0	-	-	-	0	-	0
72	0	-	0	-	0	0	1	-	1	1	-	1
73	0	-	0	-	0	0	0	-	0	0	-	0
74	1	-	1	-	0	0	0	-	0	0	1	1
75	2	-	2	3	0	3	1	-	1	0	0	0
76	0	-	0	1	0	1	2	1	3	0	0	0
77	0	-	0	0	0	0	2	0	2	0	0	0
78	2	-	2	1	0	1	1	1	2	1	0	1
79	1	-	1	1	0	1	0	1	1	1	1	2
80	3	-	3	3	0	3	2	0	2	1	0	1
81	2	-	2	3	1	4	0	0	0	1	0	1
82	4	1	5	0	0	0	1	0	1	0	1	1
83	2	1	3	4	0	4	1	0	1	2	1	3
84	1	1	2	1	0	1	0	1	1	2	1	3
85	1	0	1	1	1	2	4	1	5	-	0	0
86	1	2	3	4	0	4	0	0	0	-	2	2

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	1			2			3			4		
	M	F	T	M	F	T	M	F	T	M	F	T
87	3	2	5	1	1	2	0	1	1	-	0	0
88	1	1	2	1	1	2	0	1	1	-	0	0
89	0	2	2	3	0	3	1	2	3	-	2	2
90	0	2	2	0	3	3	0	2	2	-	0	0
91	0	4	4	1	1	2	1	1	2	-	0	0
92	1	0	1	-	0	0	0	0	0	-	2	2
93	0	3	3	-	3	3	0	0	0	-	0	0
94	1	1	2	-	0	0	1	0	1	-	0	0
95	-	0	0	-	2	2	-	1	1	-	2	2
96	-	1	1	-	2	2	-	0	0	-	1	1
97	-	1	1	-	0	0	-	0	0	-	-	-
98	-	1	1	-	0	0	-	0	0	-	-	-
99	-	0	0	-	0	0	-	0	0	-	-	-
100	-	0	0	-	1	1	-	0	0	-	-	-
101	-	0	0	-	-	-	-	1	1	-	-	-
102	-	0	0	-	-	-	-	0	0	-	-	-
103	-	0	0	-	-	-	-	0	0	-	-	-
104	-	0	0	-	-	-	-	0	0	-	-	-
105	-	1	1	-	-	-	-	0	0	-	-	-
106	-	-	-	-	-	-	-	1	1	-	-	-
107	-	-	-	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	28	24	52	28	17	45	18	15	33	12	14	26

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	6			7			8			9		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	1	1	2	-	-	-	-	-	-	-	-	-
58	0	1	1	-	-	-	-	-	-	-	-	-
59	0	0	0	-	-	-	-	-	-	-	-	-
60	0	0	0	-	-	-	-	-	-	-	-	-
61	0	0	0	-	-	-	-	-	-	-	-	-
62	0	0	0	-	-	-	-	-	-	-	-	-
63	0	0	0	-	-	-	-	-	-	-	-	-
64	0	1	1	-	-	-	-	-	-	-	1	1
65	0	2	2	-	-	-	-	-	-	-	0	0
66	0	1	1	-	-	-	-	-	-	-	1	1
67	0	2	2	-	-	-	-	-	-	-	0	0
68	2	1	3	-	-	-	-	-	-	-	0	0
69	1	0	1	-	-	-	-	-	-	-	0	0
70	0	2	2	-	-	-	-	-	-	1	0	1
71	0	2	2	1	-	1	-	-	-	2	2	4
72	1	2	3	0	-	0	-	-	-	5	3	8
73	0	2	2	1	-	1	-	-	-	1	1	2
74	0	0	0	1	-	1	-	-	-	4	0	4
75	3	1	4	0	-	0	-	-	-	4	0	4
76	1	4	5	0	1	1	-	-	-	4	0	4
77	3	2	5	0	0	0	-	-	-	6	2	8
78	4	3	7	1	1	2	1	-	1	8	4	12
79	2	8	10	0	0	0	0	-	0	4	2	6
80	6	5	11	1	0	1	1	-	1	9	5	14
81	3	5	8	0	1	1	0	1	1	7	1	8
82	5	5	10	1	0	1	5	1	6	8	2	10
83	3	8	11	2	0	2	1	0	1	5	2	7
84	1	4	5	2	0	2	0	0	0	2	3	5
85	2	8	10	2	0	2	3	0	3	3	3	6
86	1	6	7	0	0	0	2	0	2	4	3	7

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	6			7			8			9		
	M	F	T	M	F	T	M	F	T	M	F	T
87	4	3	7	0	1	1	0	0	0	0	1	1
88	0	4	4	1	0	1	1	0	1	1	5	6
89	2	3	5	0	2	2	-	0	0	0	2	2
90	0	8	8	1	0	1	-	0	0	0	3	3
91	0	3	3	0	1	1	-	0	0	1	5	6
92	1	3	4	0	1	1	-	0	0	0	3	3
93	1	2	3	0	1	1	-	0	0	1	3	4
94	-	2	2	1	0	1	-	1	1	0	7	7
95	-	2	2	-	0	0	-	0	0	0	1	1
96	-	3	3	-	1	1	-	0	0	1	8	9
97	-	1	1	-	1	1	-	0	0	-	6	6
98	-	1	1	-	0	0	-	0	0	-	10	10
99	-	2	2	-	0	0	-	0	0	-	8	8
100	-	1	1	-	0	0	-	0	0	-	15	15
101	-	2	2	-	0	0	-	0	0	-	9	9
102	-	2	2	-	0	0	-	1	1	-	12	12
103	-	0	0	-	0	0	-	1	1	-	17	17
104	-	0	0	-	1	1	-	2	2	-	10	10
105	-	2	2	-	0	0	-	0	0	-	8	8
106	-	1	1	-	0	0	-	1	1	-	9	9
107	-	1	1	-	0	0	-	0	0	-	4	4
108	-	-	-	-	1	1	-	0	0	-	9	9
109	-	-	-	-	0	0	-	0	0	-	2	2
110	-	-	-	-	0	0	-	1	1	-	7	7
111	-	-	-	-	1	1	-	0	0	-	2	2
112	-	-	-	-	-	-	-	1	1	-	0	0
113	-	-	-	-	-	-	-	-	-	-	2	2
114	-	-	-	-	-	-	-	-	-	-	1	1
115	-	-	-	-	-	-	-	-	-	-	0	0
116	-	-	-	-	-	-	-	-	-	-	0	0
117	-	-	-	-	-	-	-	-	-	-	0	0
118	-	-	-	-	-	-	-	-	-	-	0	0
119	-	-	-	-	-	-	-	-	-	-	0	0
120	-	-	-	-	-	-	-	-	-	-	0	0
121	-	-	-	-	-	-	-	-	-	-	0	0
122	-	-	-	-	-	-	-	-	-	-	0	0
123	-	-	-	-	-	-	-	-	-	-	1	1
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	47	122	169	15	14	29	14	10	24	81	205	286

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	10			11			12			13		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	1	1	-	-	-
49	-	-	-	-	-	-	-	0	0	-	-	-
50	-	-	-	-	-	-	-	0	0	-	-	-
51	-	-	-	-	1	1	-	0	0	-	-	-
52	-	1	1	-	0	0	-	0	0	-	-	-
53	2	0	2	-	0	0	-	0	0	-	-	-
54	0	0	0	-	0	0	-	0	0	-	-	-
55	1	0	1	-	0	0	1	0	1	-	-	-
56	1	1	2	-	1	1	0	0	0	-	2	2
57	0	0	0	-	0	0	1	2	3	-	0	0
58	1	1	2	-	0	0	0	0	0	-	0	0
59	0	0	0	-	0	0	0	0	0	1	0	1
60	1	0	1	-	0	0	0	0	0	0	0	0
61	1	2	3	-	0	0	0	0	0	0	0	0
62	1	1	2	-	0	0	0	0	0	0	1	1
63	1	2	3	-	0	0	1	0	1	0	0	0
64	0	4	4	-	0	0	2	0	2	0	0	0
65	8	4	12	-	0	0	1	1	2	0	0	0
66	8	3	11	1	0	1	1	0	1	0	0	0
67	4	3	7	2	1	3	0	0	0	0	0	0
68	3	1	4	4	1	5	4	1	5	0	0	0
69	9	4	13	2	1	3	2	3	5	2	1	3
70	2	6	8	2	2	4	2	1	3	0	0	0
71	10	6	16	4	1	5	2	0	2	1	0	1
72	5	9	14	3	0	3	2	0	2	1	0	1
73	13	10	23	6	3	9	3	0	3	0	0	0
74	10	13	23	2	1	3	5	1	6	0	0	0
75	8	11	19	2	3	5	1	4	5	5	1	6
76	6	13	19	4	2	6	5	4	9	3	1	4
77	9	13	22	5	2	7	13	3	16	5	1	6
78	7	16	23	6	3	9	5	2	7	4	0	4
79	6	11	17	4	1	5	10	2	12	0	0	0
80	4	14	18	6	2	8	10	2	12	3	1	4
81	2	12	14	2	4	6	8	2	10	3	3	6
82	4	13	17	4	4	8	2	4	6	0	0	0
83	3	10	13	2	2	4	6	2	8	2	1	3
84	2	26	28	2	4	6	3	3	6	2	1	3
85	4	14	18	1	1	2	2	3	5	2	2	4
86	-	13	13	1	2	3	2	5	7	4	3	7

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	10			11			12			13		
	M	F	T	M	F	T	M	F	T	M	F	T
87	-	11	11	1	1	2	2	1	3	2	2	4
88	-	9	9	1	0	1	2	2	4	1	6	7
89	-	14	14	2	2	4	2	2	4	1	1	2
90	-	8	8	-	0	0	0	2	2	1	5	6
91	-	5	5	-	2	2	0	4	4	-	2	2
92	-	9	9	-	1	1	1	1	2	-	3	3
93	-	5	5	-	3	3	0	1	1	-	3	3
94	-	4	4	-	3	3	1	6	7	-	1	1
95	-	3	3	-	3	3	-	4	4	-	2	2
96	-	5	5	-	0	0	-	2	2	-	2	2
97	-	3	3	-	0	0	-	1	1	-	1	1
98	-	3	3	-	1	1	-	2	2	-	-	-
99	-	2	2	-	1	1	-	1	1	-	-	-
100	-	0	0	-	1	1	-	1	1	-	-	-
101	-	1	1	-	0	0	-	2	2	-	-	-
102	-	1	1	-	0	0	-	1	1	-	-	-
103	-	-	-	-	0	0	-	0	0	-	-	-
104	-	-	-	-	0	0	-	0	0	-	-	-
105	-	-	-	-	0	0	-	0	0	-	-	-
106	-	-	-	-	0	0	-	1	1	-	-	-
107	-	-	-	-	3	3	-	0	0	-	-	-
108	-	-	-	-	-	-	-	0	0	-	-	-
109	-	-	-	-	-	-	-	0	0	-	-	-
110	-	-	-	-	-	-	-	0	0	-	-	-
111	-	-	-	-	-	-	-	0	0	-	-	-
112	-	-	-	-	-	-	-	0	0	-	-	-
113	-	-	-	-	-	-	-	0	0	-	-	-
114	-	-	-	-	-	-	-	1	1	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	136	320	456	69	63	132	102	81	183	43	46	89

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	14			15			16			17		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	1	1	-	-	-
63	-	-	-	-	-	-	-	0	0	-	-	-
64	-	-	-	-	1	1	-	0	0	-	-	-
65	-	-	-	-	0	0	-	0	0	-	-	-
66	-	1	1	-	0	0	-	0	0	-	-	-
67	-	0	0	-	0	0	-	0	0	-	-	-
68	-	0	0	1	0	1	2	1	3	-	-	-
69	2	0	2	0	0	0	1	0	1	-	-	-
70	0	0	0	0	0	0	0	1	1	-	-	-
71	1	0	1	0	0	0	0	1	1	-	-	-
72	4	0	4	0	0	0	0	1	1	-	-	-
73	2	0	2	0	1	1	2	0	2	-	-	-
74	3	3	6	0	0	0	2	2	4	-	-	-
75	1	3	4	1	0	1	2	1	3	-	-	-
76	6	2	8	0	0	0	4	2	6	-	-	-
77	5	3	8	2	0	2	2	1	3	-	-	-
78	9	4	13	2	0	2	9	4	13	-	-	-
79	4	2	6	2	0	2	4	1	5	-	-	-
80	10	5	15	2	0	2	6	3	9	-	-	-
81	8	1	9	2	0	2	5	2	7	-	-	-
82	8	2	10	4	0	4	2	5	7	-	-	-
83	2	3	5	2	0	2	7	3	10	1	-	1
84	4	5	9	1	0	1	4	5	9	-	-	0
85	6	4	10	0	0	0	2	8	10	-	-	0
86	2	5	7	3	0	3	2	5	7	-	-	0

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	14			15			16			17		
	M	F	T	M	F	T	M	F	T	M	F	T
87	3	13	16	3	0	3	4	6	10	-	-	0
88	2	5	7	0	0	0	2	9	11	-	-	0
89	-	7	7	1	1	2	2	3	5	-	-	0
90	-	5	5	-	0	0	-	6	6	-	-	0
91	-	4	4	-	0	0	-	5	5	-	-	0
92	-	3	3	-	0	0	-	4	4	-	1	1
93	-	3	3	-	0	0	-	1	1	-	1	1
94	-	6	6	-	0	0	-	2	2	-	0	0
95	-	2	2	-	0	0	-	2	2	-	0	0
96	-	2	2	-	0	0	-	6	6	-	2	2
97	-	4	4	-	0	0	-	3	3	-	-	-
98	-	0	0	-	0	0	-	2	2	-	-	-
99	-	1	1	-	0	0	-	2	2	-	-	-
100	-	0	0	-	0	0	-	0	0	-	-	-
101	-	0	0	-	0	0	-	1	1	-	-	-
102	-	0	0	-	0	0	-	-	-	-	-	-
103	-	0	0	-	0	0	-	-	-	-	-	-
104	-	0	0	-	2	2	-	-	-	-	-	-
105	-	0	0	-	1	1	-	-	-	-	-	-
106	-	0	0	-	1	1	-	-	-	-	-	-
107	-	0	0	-	-	-	-	-	-	-	-	-
108	-	1	1	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	82	99	181	26	7	33	64	99	163	1	4	5

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	18			19			20			21		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	1	-	1	-	-	-
54	-	-	-	-	-	-	0	-	0	-	-	-
55	-	-	-	-	-	-	0	-	0	-	-	-
56	-	-	-	-	-	-	0	-	0	-	-	-
57	-	-	-	-	-	-	0	-	0	-	-	-
58	-	-	-	-	-	-	0	-	0	-	-	-
59	-	-	-	-	-	-	0	-	0	-	-	-
60	-	-	-	1	-	1	0	-	0	-	-	-
61	-	-	-	0	-	0	0	-	0	-	-	-
62	-	1	1	0	-	0	0	-	0	-	-	-
63	-	0	0	0	-	0	0	-	0	-	-	-
64	-	0	0	0	-	0	0	-	0	-	-	-
65	-	0	0	0	-	0	0	1	1	-	-	-
66	-	0	0	0	-	0	0	0	0	-	-	-
67	-	0	0	1	-	1	1	0	1	-	-	-
68	-	0	0	0	-	0	0	0	0	-	-	-
69	-	0	0	0	1	1	3	0	3	-	-	-
70	-	0	0	0	2	2	2	1	3	1	-	1
71	-	0	0	0	0	0	2	1	3	0	-	0
72	1	0	1	0	1	1	1	2	3	0	-	0
73	0	1	1	0	0	0	5	2	7	1	-	1
74	0	2	2	1	2	3	3	1	4	0	-	0
75	1	2	3	0	0	0	13	4	17	0	-	0
76	1	1	2	0	0	0	5	4	9	1	-	1
77	1	1	2	1	0	1	7	0	7	0	-	0
78	1	2	3	2	0	2	7	0	7	2	-	2
79	0	2	2	2	0	2	4	2	6	0	-	0
80	0	1	1	2	0	2	8	2	10	2	-	2
81	0	5	5	0	1	1	4	4	8	1	-	1
82	2	5	7	1	0	1	8	4	12	0	-	0
83	1	4	5	2	0	2	6	4	10	1	-	1
84	2	3	5	3	0	3	4	3	7	1	-	1
85	3	5	8	0	1	1	3	7	10	0	-	0
86	2	3	5	2	0	2	1	7	8	1	1	2

Appendix Table 5 (cont'd)

Haul no.	18			19			20			21		
Total length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
87	-	4	4	0	0	0	-	2	2	0	0	0
88	-	8	8	0	0	0	-	5	5	2	0	2
89	-	5	5	0	0	0	-	5	5	2	0	2
90	-	2	2	0	0	0	-	5	5	-	0	0
91	-	2	2	0	0	0	-	5	5	-	0	0
92	-	3	3	0	0	0	-	5	5	-	0	0
93	-	4	4	1	0	1	-	2	2	-	0	0
94	-	4	4	-	1	1	-	4	5	-	0	0
95	-	2	2	-	0	0	-	1	1	-	0	0
96	-	1	1	-	0	0	-	0	0	-	1	1
97	-	1	1	-	0	0	-	0	0	-	-	-
98	-	3	3	-	0	0	-	1	1	-	-	-
99	-	1	1	-	0	0	-	0	0	-	-	-
100	-	1	1	-	1	1	-	0	0	-	-	-
101	-	0	0	-	0	0	-	2	2	-	-	-
102	-	1	1	-	0	0	-	1	1	-	-	-
103	-	1	1	-	0	0	-	-	-	-	-	-
104	-	0	0	-	0	0	-	-	-	-	-	-
105	-	1	1	-	0	0	-	-	-	-	-	-
106	-	-	-	-	1	1	-	-	-	-	-	-
107	-	-	-	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	15	82	97	19	11	30	88	87	176	15	2	17

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	22			23			24			25		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	1	-	1
62	1	-	1	-	-	-	-	-	-	0	-	0
63	0	-	0	-	1	1	-	-	-	0	-	0
64	0	1	1	-	0	0	-	-	-	0	-	0
65	1	1	2	-	0	0	-	-	-	0	-	0
66	0	0	0	-	0	0	-	-	-	1	-	1
67	0	1	1	-	1	1	-	-	-	0	-	0
68	0	2	2	-	1	1	-	-	-	0	-	0
69	1	0	1	-	1	1	-	1	1	1	-	1
70	0	0	0	-	0	0	1	0	1	0	-	0
71	0	1	1	1	0	1	0	0	0	0	-	0
72	5	0	5	0	0	0	0	0	0	0	-	0
73	3	2	5	0	0	0	0	1	1	1	-	1
74	3	0	3	0	1	1	0	0	0	1	-	1
75	2	0	2	0	0	0	0	0	0	1	-	1
76	2	1	3	0	0	0	0	0	0	0	-	0
77	6	3	9	1	0	1	0	0	0	0	-	0
78	2	0	2	3	0	3	0	0	0	0	-	0
79	5	1	6	2	2	4	2	0	2	1	-	1
80	2	3	5	0	0	0	1	0	1	0	-	0
81	5	1	6	1	0	1	0	0	0	0	-	0
82	1	2	3	0	2	2	0	0	0	0	-	0
83	2	0	2	2	1	3	3	1	4	1	-	1
84	0	1	1	1	1	2	1	1	2	1	-	1
85	3	0	3	1	0	1	1	0	1	1	-	1
86	1	1	2	0	2	2	1	0	1	0	-	0

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	22			23			24			25		
	M	F	T	M	F	T	M	F	T	M	F	T
87	2	2	4	0	0	0	1	0	1	0	-	0
88	0	1	1	1	1	2	1	2	3	1	-	1
89	1	1	2	-	1	1	0	2	2	-	-	0
90	-	2	2	-	0	0	0	1	1	-	-	0
91	-	0	0	-	0	0	0	1	1	-	-	0
92	-	1	1	-	0	0	1	0	1	-	-	0
93	-	2	2	-	0	0	-	0	0	-	1	1
94	-	0	0	-	0	0	-	0	0	-	-	-
95	-	3	3	-	0	0	-	0	0	-	-	-
96	-	1	1	-	0	0	-	1	1	-	-	-
97	-	1	1	-	0	0	-	0	0	-	-	-
98	-	0	0	-	0	0	-	0	0	-	-	-
99	-	1	1	-	0	0	-	0	0	-	-	-
100	-	2	2	-	0	0	-	1	1	-	-	-
101	-	1	1	-	0	0	-	0	0	-	-	-
102	-	-	-	-	0	0	-	0	0	-	-	-
103	-	-	-	-	0	0	-	0	0	-	-	-
104	-	-	-	-	0	0	-	0	0	-	-	-
105	-	-	-	-	0	0	-	0	0	-	-	-
106	-	-	-	-	0	0	-	0	0	-	-	-
107	-	-	-	-	0	0	-	1	1	-	-	-
108	-	-	-	-	0	0	-	-	-	-	-	-
109	-	-	-	-	1	1	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	48	39	87	13	16	29	13	13	26	11	1	12

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	26			27			28			29		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	1	-	1	-	-	-
60	-	-	-	-	-	-	0	1	1	-	-	-
61	-	-	-	1	-	1	0	0	0	-	-	-
62	-	-	-	0	-	0	0	2	2	-	-	-
63	-	-	-	0	-	0	2	0	2	-	1	1
64	-	-	-	0	-	0	0	1	1	-	0	0
65	-	-	-	0	-	0	2	2	4	-	0	0
66	-	1	1	0	1	1	5	6	11	-	0	0
67	-	0	0	1	2	3	2	5	7	1	0	1
68	-	0	0	2	2	4	3	4	7	1	0	1
69	1	0	1	2	4	6	4	4	8	0	0	0
70	0	1	1	1	2	3	4	4	8	1	0	1
71	0	0	0	2	0	2	4	3	7	4	0	4
72	0	1	1	3	3	6	1	6	7	1	1	2
73	0	1	1	4	3	7	4	9	13	4	0	4
74	4	1	5	3	1	4	6	4	10	2	0	2
75	3	2	5	8	9	17	2	5	7	1	2	3
76	6	0	6	4	3	7	2	6	8	2	0	2
77	1	0	1	11	7	18	3	5	8	1	0	1
78	1	0	1	10	2	12	2	4	6	1	0	1
79	1	0	1	4	10	14	2	5	7	0	2	2
80	3	2	5	7	9	16	6	6	12	2	0	2
81	0	1	1	3	4	7	0	5	5	3	0	3
82	2	0	2	10	7	17	1	8	9	0	0	0
83	2	1	3	3	7	11	1	9	10	2	0	2
84	4	1	5	2	11	13	1	4	5	1	0	1
85	1	2	3	4	7	11	1	4	5	0	1	1
86	2	1	3	1	6	7	1	3	4	1	0	1

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	26			27			28			29		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	1	2	0	6	6	1	4	5	-	0	0
88	1	2	3	1	5	6	1	2	3	-	0	0
89	-	2	2	1	10	11	0	3	3	-	0	0
90	-	2	2	-	8	8	0	2	2	-	0	0
91	-	0	0	-	8	8	2	3	5	-	0	0
92	-	2	2	-	4	4	-	0	0	-	0	0
93	-	2	2	-	7	7	-	2	2	-	0	0
94	-	1	1	-	6	6	-	0	0	-	0	0
95	-	0	0	-	5	5	-	2	2	-	0	0
96	-	3	3	-	4	4	-	2	2	-	0	0
97	-	2	2	-	0	0	-	0	0	-	2	2
98	-	0	0	-	4	4	-	0	0	-	1	1
99	-	0	0	-	4	4	-	1	1	-	0	0
100	-	0	0	-	1	1	-	2	2	-	0	0
101	-	1	1	-	1	1	-	0	0	-	0	0
102	-	0	0	-	2	2	-	1	1	-	0	0
103	-	0	0	-	0	0	-	2	2	-	2	2
104	-	2	2	-	0	0	-	1	1	-	0	0
105	-	2	2	-	0	0	-	2	2	-	0	0
106	-	1	1	-	0	0	-	0	0	-	1	1
107	-	1	1	-	1	1	-	1	1	-	0	0
108	-	-	-	-	-	-	-	0	0	-	0	0
109	-	-	-	-	-	-	-	2	2	-	0	0
110	-	-	-	-	-	-	-	1	1	-	0	0
111	-	-	-	-	-	-	-	0	0	-	0	0
112	-	-	-	-	-	-	-	0	0	-	0	0
113	-	-	-	-	-	-	-	1	1	-	1	1
114	-	-	-	-	-	-	-	0	0	-	-	-
115	-	-	-	-	-	-	-	0	0	-	-	-
116	-	-	-	-	-	-	-	0	0	-	-	-
117	-	-	-	-	-	-	-	1	1	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	33	39	72	88	176	265	64	150	214	28	14	42

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	30			31			32			33		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	1	1	2	-	-	-
57	-	-	-	-	-	-	0	0	0	-	-	-
58	-	-	-	-	-	-	0	0	0	-	-	-
59	-	1	1	-	-	-	0	0	0	-	-	-
60	-	0	0	-	-	-	1	1	2	-	-	-
61	-	0	0	-	-	-	1	0	1	-	-	-
62	-	0	0	-	-	-	1	7	8	-	-	-
63	-	0	0	-	-	-	2	1	3	-	-	-
64	-	0	0	-	1	1	2	3	5	-	-	-
65	-	0	0	-	0	0	5	6	11	-	1	1
66	-	1	1	-	0	0	4	7	11	-	0	0
67	1	1	2	-	0	0	4	10	14	2	1	3
68	0	2	2	-	0	0	10	16	26	0	0	0
69	0	1	1	-	0	0	7	12	19	0	0	0
70	1	1	2	1	0	1	7	13	20	2	0	2
71	4	0	4	0	0	0	7	21	28	0	2	2
72	1	0	1	0	0	0	6	20	26	1	0	1
73	0	0	0	0	0	0	11	19	30	3	0	3
74	3	2	5	0	0	0	10	16	26	1	3	4
75	3	0	3	0	0	0	10	20	30	1	0	1
76	5	1	6	0	0	0	16	35	51	0	2	2
77	2	2	4	0	0	0	7	28	35	1	1	2
78	5	2	7	1	0	1	8	30	38	4	0	4
79	1	0	1	0	0	0	8	33	41	1	3	4
80	2	1	3	1	1	2	7	40	47	2	5	7
81	5	1	6	1	0	1	8	33	41	2	3	5
82	2	1	3	1	0	1	5	46	51	1	1	2
83	5	1	6	2	0	2	3	35	38	5	2	7
84	4	1	5	0	0	0	4	45	49	2	4	6
85	3	0	3	3	0	3	3	53	56	0	2	2
86	5	0	5	1	0	1	1	51	52	0	3	3

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	30			31			32			33		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	0	1	2	0	2	1	34	35	0	2	2
88	2	0	2	-	0	0	0	27	27	0	5	5
89	3	0	3	-	0	0	0	37	37	0	3	3
90	-	0	0	-	1	1	0	19	19	0	1	1
91	-	0	0	-	0	0	0	33	33	0	0	0
92	-	0	0	-	1	1	1	23	24	0	1	1
93	-	0	0	-	0	0	-	14	14	1	0	1
94	-	0	0	-	0	0	-	14	14	-	3	3
95	-	0	0	-	0	0	-	10	10	-	0	0
96	-	1	1	-	0	0	-	6	6	-	2	2
97	-	1	1	-	0	0	-	9	9	-	1	1
98	-	0	0	-	0	0	-	8	8	-	1	1
99	-	1	1	-	1	1	-	7	7	-	1	1
100	-	2	2	-	0	0	-	1	1	-	-	-
101	-	1	1	-	0	0	-	2	2	-	-	-
102	-	1	1	-	1	1	-	0	0	-	-	-
103	-	2	2	-	-	-	-	1	1	-	-	-
104	-	0	0	-	-	-	-	0	0	-	-	-
105	-	2	2	-	-	-	-	0	0	-	-	-
106	-	2	2	-	-	-	-	0	0	-	-	-
107	-	0	0	-	-	-	-	1	1	-	-	-
108	-	0	0	-	-	-	-	-	-	-	-	-
109	-	1	1	-	-	-	-	-	-	-	-	-
110	-	1	1	-	-	-	-	-	-	-	-	-
111	-	0	0	-	-	-	-	-	-	-	-	-
112	-	1	1	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	58	35	93	13	6	19	161	848	1009	29	53	82

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	34			35			36			37		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	1	1	-	-	-	-	-	-	-	-	-
57	1	0	1	-	-	-	-	-	-	-	-	-
58	1	0	1	-	-	-	-	-	-	-	-	-
59	0	0	0	-	-	-	-	-	-	-	-	-
60	0	0	0	-	-	-	-	-	-	-	-	-
61	0	0	0	-	-	-	-	-	-	-	-	-
62	0	1	1	-	-	-	-	-	-	-	-	-
63	0	1	1	-	1	1	-	-	-	-	-	-
64	0	1	1	-	0	0	-	-	-	-	-	-
65	0	1	1	-	0	0	1	-	1	-	-	-
66	1	2	3	-	0	0	1	-	1	-	-	-
67	1	0	1	1	0	1	0	-	0	-	-	-
68	1	2	3	0	0	0	0	-	0	-	1	1
69	4	1	5	0	0	0	0	-	0	-	1	1
70	0	4	4	0	0	0	0	-	0	1	2	3
71	3	3	6	2	0	2	1	1	2	1	0	1
72	3	6	9	0	0	0	0	1	1	3	0	3
73	0	0	0	0	0	0	3	0	3	2	0	2
74	6	7	13	2	0	2	4	0	4	1	6	7
75	2	3	5	4	0	4	3	0	3	1	1	2
76	9	4	13	0	0	0	5	4	9	3	2	5
77	3	4	7	2	2	4	5	2	7	2	2	4
78	5	12	17	1	1	2	2	2	4	2	5	7
79	2	10	12	3	0	3	5	3	8	1	0	1
80	7	10	17	3	1	4	2	5	7	7	3	10
81	3	6	9	2	0	2	5	2	7	2	5	7
82	3	14	17	1	0	1	0	1	1	1	4	5
83	2	12	14	1	0	1	0	0	0	3	9	12
84	2	6	8	3	2	5	4	3	7	5	10	15
85	0	10	10	1	0	1	0	2	2	2	5	7
86	0	15	15	2	0	2	3	0	3	2	11	13

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	34			35			36			37		
	M	F	T	M	F	T	M	F	T	M	F	T
87	3	14	17	2	0	2	1	3	4	1	8	9
88	-	13	13	0	0	0	3	5	8	1	5	6
89	-	6	6	1	1	2	4	0	4	0	8	8
90	-	7	7	0	0	0	-	0	0	0	9	9
91	-	15	15	1	0	1	-	1	1	0	2	2
92	-	7	7	-	0	0	-	2	2	0	2	2
93	-	2	2	-	1	1	-	1	1	1	2	3
94	-	9	9	-	1	1	-	0	0	-	6	6
95	-	7	7	-	0	0	-	2	2	-	4	4
96	-	3	3	-	4	4	-	1	1	-	2	2
97	-	4	4	-	3	3	-	1	1	-	1	1
98	-	4	4	-	5	5	-	1	1	-	1	1
99	-	5	5	-	4	4	-	0	0	-	-	-
100	-	1	1	-	3	3	-	1	1	-	-	-
101	-	-	-	-	4	4	-	2	2	-	-	-
102	-	-	-	-	5	5	-	0	0	-	-	-
103	-	-	-	-	4	4	-	0	0	-	-	-
104	-	-	-	-	6	6	-	1	1	-	-	-
105	-	-	-	-	5	5	-	0	0	-	-	-
106	-	-	-	-	2	2	-	1	1	-	-	-
107	-	-	-	-	2	2	-	0	0	-	-	-
108	-	-	-	-	5	5	-	1	1	-	-	-
109	-	-	-	-	3	3	-	1	1	-	-	-
110	-	-	-	-	1	1	-	-	-	-	-	-
111	-	-	-	-	2	2	-	-	-	-	-	-
112	-	-	-	-	1	1	-	-	-	-	-	-
113	-	-	-	-	1	1	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	62	233	295	32	70	102	52	50	102	42	117	159

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	38			39			40			41		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	1	1	-	-	-	-	-	-
61	-	-	-	-	0	0	-	1	1	-	-	-
62	-	-	-	-	0	0	-	0	0	-	-	-
63	-	1	1	-	0	0	-	0	0	1	-	1
64	-	0	0	1	0	1	-	0	0	0	-	0
65	-	0	0	1	0	1	-	0	0	1	1	2
66	-	0	0	0	0	0	-	0	0	1	1	2
67	-	0	0	0	0	0	1	0	1	0	1	1
68	-	1	1	0	0	0	0	0	0	2	1	3
69	-	3	3	1	0	1	0	0	0	0	0	0
70	1	1	2	0	0	0	0	2	2	2	1	3
71	2	1	3	0	0	0	0	0	0	0	0	0
72	2	1	3	1	0	1	1	0	1	0	0	0
73	1	2	3	1	0	1	0	1	1	3	0	3
74	4	2	6	0	1	1	1	0	1	1	2	3
75	2	2	4	0	0	0	1	1	2	3	0	3
76	4	5	9	0	0	0	1	0	1	2	0	2
77	1	4	5	2	0	2	0	1	1	3	0	3
78	3	4	7	0	0	0	2	0	2	0	0	0
79	7	7	14	2	0	2	0	0	0	3	2	5
80	2	3	5	0	0	0	0	1	1	1	0	1
81	2	12	14	1	0	1	0	1	1	1	2	3
82	3	6	9	3	2	5	1	0	1	3	0	3
83	3	10	13	0	1	1	2	0	2	1	0	1
84	2	15	17	0	0	0	0	1	1	2	1	3
85	2	12	14	0	1	1	0	0	0	2	1	3
86	2	9	11	0	0	0	0	0	0	0	2	2

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	38			39			40			41		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	10	11	1	2	3	3	0	3	5	0	5
88	-	6	6	2	3	5	1	0	1	1	0	1
89	-	7	7	-	2	2	0	0	0	-	1	1
90	-	9	9	-	1	1	1	0	1	-	0	0
91	-	7	7	-	1	1	0	0	0	-	1	1
92	-	16	16	-	2	2	1	0	1	-	0	0
93	-	4	4	-	3	3	-	1	1	-	1	1
94	-	2	2	-	4	4	-	0	0	-	1	1
95	-	2	2	-	4	4	-	0	0	-	3	3
96	-	2	2	-	2	2	-	1	1	-	0	0
97	-	3	3	-	1	1	-	0	0	-	0	0
98	-	1	1	-	0	0	-	2	2	-	1	1
99	-	1	1	-	1	1	-	1	1	-	0	0
100	-	-	-	-	0	0	-	0	0	-	0	0
101	-	-	-	-	3	3	-	0	0	-	0	0
102	-	-	-	-	4	4	-	1	1	-	1	1
103	-	-	-	-	0	0	-	4	4	-	0	0
104	-	-	-	-	2	2	-	0	0	-	2	2
105	-	-	-	-	0	0	-	1	1	-	1	1
106	-	-	-	-	0	0	-	0	0	-	1	1
107	-	-	-	-	2	2	-	2	2	-	1	1
108	-	-	-	-	1	1	-	0	0	-	0	0
109	-	-	-	-	0	0	-	0	0	-	0	0
110	-	-	-	-	2	2	-	0	0	-	1	1
111	-	-	-	-	-	-	-	1	1	-	-	-
112	-	-	-	-	-	-	-	1	1	-	-	-
113	-	-	-	-	-	-	-	0	0	-	-	-
114	-	-	-	-	-	-	-	0	0	-	-	-
115	-	-	-	-	-	-	-	1	1	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	44	171	215	16	46	62	16	25	41	38	30	68

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	42			43			44			45		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-	-	-	-	-
63	-	-	-	1	-	1	-	-	-	-	-	-
64	-	-	-	0	1	1	-	-	-	-	-	-
65	-	1	1	1	3	4	-	-	-	-	-	-
66	-	1	1	3	1	4	-	-	-	-	-	-
67	-	0	0	0	2	2	-	-	-	-	-	-
68	-	0	0	2	1	3	-	-	-	-	-	-
69	-	0	0	2	1	3	-	-	-	-	-	-
70	-	0	0	1	1	2	-	-	-	-	-	-
71	-	0	0	0	1	1	-	-	-	-	-	-
72	-	0	0	0	3	3	1	-	1	-	-	-
73	-	1	1	1	3	4	0	-	0	-	-	-
74	-	1	1	8	10	18	2	-	2	-	-	-
75	-	0	0	0	4	4	0	1	1	-	-	-
76	-	0	0	3	6	9	1	0	1	-	-	-
77	1	1	2	9	7	16	0	0	0	-	-	-
78	0	0	0	4	17	21	0	0	0	2	-	2
79	1	1	2	7	8	15	0	0	0	2	-	2
80	1	0	1	9	16	25	2	1	3	0	-	0
81	0	0	0	3	8	11	3	0	3	0	-	0
82	0	1	1	7	9	16	2	0	2	2	-	2
83	0	1	1	3	3	6	1	0	1	2	-	2
84	0	2	2	6	14	20	1	0	1	2	-	2
85	0	1	1	2	10	12	0	0	0	2	-	2
86	1	0	1	2	14	16	0	0	0	1	1	2

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	42			43			44			45		
	M	F	T	M	F	T	M	F	T	M	F	T
87	0	2	2	2	9	11	2	0	2	2	0	2
88	0	1	1	0	16	16	-	0	0	0	0	0
89	0	2	2	0	6	6	-	0	0	2	0	2
90	0	0	0	0	12	12	-	0	0	2	0	2
91	0	0	0	1	7	8	-	0	0	1	0	1
92	0	1	1	0	9	9	-	0	0	-	0	0
93	0	0	0	1	5	6	-	0	0	-	0	0
94	1	1	2	0	5	5	-	0	0	-	0	0
95	-	1	1	0	6	6	-	0	0	-	0	0
96	-	-	-	0	3	3	-	0	0	-	1	1
97	-	-	-	1	1	2	-	0	0	-	1	1
98	-	-	-	-	2	2	-	0	0	-	1	1
99	-	-	-	-	2	2	-	1	1	-	0	0
100	-	-	-	-	0	0	-	0	0	-	0	0
101	-	-	-	-	1	1	-	0	0	-	0	0
102	-	-	-	-	4	4	-	0	0	-	0	0
103	-	-	-	-	0	0	-	2	2	-	0	0
104	-	-	-	-	0	0	-	3	3	-	0	0
105	-	-	-	-	0	0	-	2	2	-	1	1
106	-	-	-	-	0	0	-	1	1	-	0	0
107	-	-	-	-	0	0	-	1	1	-	0	0
108	-	-	-	-	1	1	-	0	0	-	0	0
109	-	-	-	-	0	0	-	1	1	-	1	1
110	-	-	-	-	0	0	-	-	-	-	0	0
111	-	-	-	-	0	0	-	-	-	-	0	0
112	-	-	-	-	1	1	-	-	-	-	0	0
113	-	-	-	-	-	-	-	-	-	-	0	0
114	-	-	-	-	-	-	-	-	-	-	0	0
115	-	-	-	-	-	-	-	-	-	-	2	2
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	5	19	24	79	233	312	15	13	28	20	8	28

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	46			47			48			49		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	1	-	1	-	-	-
54	-	-	-	-	-	-	0	-	0	-	-	-
55	-	-	-	-	-	-	0	-	0	-	-	-
56	-	-	-	-	-	-	0	-	0	-	-	-
57	-	-	-	-	-	-	0	1	1	-	-	-
58	-	-	-	-	-	-	1	1	2	-	-	-
59	-	-	-	-	-	-	1	1	2	-	-	-
60	-	-	-	-	-	-	1	0	1	-	-	-
61	-	-	-	-	-	-	3	1	4	-	-	-
62	-	1	1	-	-	-	0	1	1	-	-	-
63	-	0	0	-	-	-	0	1	1	-	-	-
64	-	1	1	-	-	-	1	2	3	-	-	-
65	1	3	4	-	-	-	2	4	6	-	-	-
66	1	1	2	-	-	-	1	1	2	-	-	-
67	1	1	2	-	-	-	1	1	2	-	-	-
68	1	4	5	-	-	-	2	3	5	-	-	-
69	2	2	4	-	-	-	3	2	5	-	-	-
70	3	0	3	-	-	-	5	2	7	-	-	-
71	3	2	5	1	-	1	4	4	8	1	-	1
72	6	1	7	0	-	0	3	2	5	0	-	0
73	3	3	6	0	-	0	1	5	6	0	1	1
74	3	3	6	1	-	1	0	2	2	0	1	1
75	5	1	6	0	1	1	0	0	0	0	1	1
76	1	5	6	1	1	2	0	2	2	0	0	0
77	4	2	6	2	0	2	1	0	1	0	0	0
78	3	1	4	1	0	1	0	0	0	0	0	0
79	3	0	3	1	0	1	1	4	5	0	0	0
80	5	1	6	0	0	0	0	1	1	0	1	1
81	2	2	4	4	0	4	1	2	3	0	3	3
82	4	0	4	1	0	1	0	1	1	0	1	1
83	0	1	1	1	1	2	0	2	2	0	0	0
84	1	0	1	2	0	2	0	3	3	0	1	1
85	0	2	2	0	0	0	0	4	4	0	1	1
86	3	0	3	1	0	1	0	2	2	0	0	0

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	46			47			48			49		
	M	F	T	M	F	T	M	F	T	M	F	T
87	2	1	3	3	0	3	0	1	1	1	2	3
88	1	0	1	3	0	3	0	2	2	-	2	2
89	2	0	2	3	0	3	0	0	0	-	0	0
90	0	0	0	2	1	3	0	1	1	-	1	1
91	0	1	1	-	0	0	0	1	1	-	1	1
92	5	1	6	-	1	1	1	0	1	-	1	1
93	-	0	0	-	0	0	1	1	2	-	2	2
94	-	2	2	-	1	1	-	1	1	-	3	3
95	-	3	3	-	1	1	-	0	0	-	1	1
96	-	0	0	-	0	0	-	1	1	-	1	1
97	-	3	3	-	1	1	-	1	1	-	1	1
98	-	1	1	-	3	3	-	1	1	-	2	2
99	-	7	7	-	2	2	-	0	0	-	0	0
100	-	4	4	-	3	3	-	1	1	-	0	0
101	-	3	3	-	2	2	-	-	-	-	0	0
102	-	5	5	-	2	2	-	-	-	-	1	1
103	-	5	5	-	0	0	-	-	-	-	0	0
104	-	6	6	-	2	2	-	-	-	-	0	0
105	-	3	3	-	5	5	-	-	-	-	0	0
106	-	5	5	-	0	0	-	-	-	-	1	1
107	-	2	2	-	2	2	-	-	-	-	-	-
108	-	4	4	-	2	2	-	-	-	-	-	-
109	-	4	4	-	0	0	-	-	-	-	-	-
110	-	6	6	-	0	0	-	-	-	-	-	-
111	-	1	1	-	1	1	-	-	-	-	-	-
112	-	0	0	-	1	1	-	-	-	-	-	-
113	-	0	0	-	-	-	-	-	-	-	-	-
114	-	0	0	-	-	-	-	-	-	-	-	-
115	-	0	0	-	-	-	-	-	-	-	-	-
116	-	0	0	-	-	-	-	-	-	-	-	-
117	-	1	1	-	-	-	-	-	-	-	-	-
118	-	0	0	-	-	-	-	-	-	-	-	-
119	-	1	1	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	65	106	171	27	33	60	35	66	101	2	29	31

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	50			51			52			53		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	1	1
57	-	-	-	1	-	1	-	-	-	2	0	2
58	-	-	-	0	-	0	-	-	-	0	0	0
59	-	-	-	0	-	0	1	1	2	0	0	0
60	-	-	-	0	-	0	1	0	1	0	0	0
61	-	-	-	0	-	0	0	1	1	0	1	1
62	-	-	-	0	-	0	0	2	2	0	0	0
63	-	-	-	0	-	0	0	1	1	0	0	0
64	1	1	2	0	-	0	2	0	2	0	0	0
65	0	0	0	0	-	0	1	3	4	1	1	2
66	0	2	2	0	-	0	0	2	2	0	1	1
67	1	0	1	0	1	1	2	3	5	1	0	1
68	1	1	2	0	1	1	2	4	6	1	1	2
69	2	4	6	0	1	1	0	5	5	2	2	4
70	6	3	9	0	0	0	2	5	7	1	2	3
71	2	4	6	0	0	0	3	6	9	1	0	1
72	2	4	6	1	0	1	1	6	7	2	0	2
73	2	3	5	0	4	4	3	5	8	3	2	5
74	1	3	4	0	1	1	4	6	10	5	4	9
75	0	5	5	0	0	0	1	6	7	2	1	3
76	2	1	3	0	0	0	2	10	12	9	0	9
77	5	4	9	1	2	3	1	5	6	8	1	9
78	3	3	6	0	1	1	0	6	6	6	2	8
79	3	2	5	2	0	2	1	5	6	4	2	6
80	4	1	5	0	0	0	2	4	6	8	0	8
81	7	4	11	0	0	0	0	3	3	4	1	5
82	3	3	6	2	0	2	1	3	4	1	1	2
83	2	4	6	2	3	5	1	1	2	5	1	6
84	2	6	8	0	0	0	0	2	2	4	2	6
85	4	3	7	0	0	0	0	2	2	9	1	10
86	4	4	8	0	1	1	1	3	4	4	2	6

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	50			51			52			53		
	M	F	T	M	F	T	M	F	T	M	F	T
87	2	4	6	0	1	1	0	1	1	8	2	10
88	4	4	8	1	0	1	0	1	1	5	1	6
89	2	7	9	2	0	2	0	5	5	2	1	3
90	0	3	3	-	2	2	0	3	3	2	4	6
91	1	2	3	-	0	0	1	0	1	4	0	4
92	-	2	2	-	0	0	-	0	0	0	2	2
93	-	2	2	-	1	1	-	3	3	0	6	6
94	-	3	3	-	0	0	-	3	3	2	1	3
95	-	4	4	-	1	1	-	1	1	-	4	4
96	-	3	3	-	0	0	-	1	1	-	5	5
97	-	4	4	-	1	1	-	2	2	-	7	7
98	-	1	1	-	1	1	-	0	0	-	3	3
99	-	1	1	-	2	2	-	0	0	-	8	8
100	-	0	0	-	2	2	-	0	0	-	10	10
101	-	1	1	-	1	1	-	0	0	-	8	8
102	-	2	2	-	1	1	-	0	0	-	8	8
103	-	2	2	-	0	0	-	0	0	-	3	3
104	-	2	2	-	3	3	-	0	0	-	12	12
105	-	2	2	-	1	1	-	0	0	-	6	6
106	-	0	0	-	1	1	-	1	1	-	5	5
107	-	0	0	-	2	2	-	0	0	-	5	5
108	-	0	0	-	1	1	-	1	1	-	4	4
109	-	0	0	-	0	0	-	-	-	-	2	2
110	-	0	0	-	0	0	-	-	-	-	2	2
111	-	0	0	-	0	0	-	-	-	-	2	2
112	-	1	1	-	0	0	-	-	-	-	3	3
113	-	-	-	-	0	0	-	-	-	-	1	1
114	-	-	-	-	1	1	-	-	-	-	0	0
115	-	-	-	-	-	-	-	-	-	-	0	0
116	-	-	-	-	-	-	-	-	-	-	0	0
117	-	-	-	-	-	-	-	-	-	-	0	0
118	-	-	-	-	-	-	-	-	-	-	0	0
119	-	-	-	-	-	-	-	-	-	-	1	1
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	66	115	181	12	37	49	33	122	155	106	145	251

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	54			55			56			57		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-	-	-	-	-
63	-	-	-	-	-	-	-	-	-	1	-	1
64	-	-	-	-	-	-	-	-	-	0	-	0
65	-	-	-	-	-	-	-	-	-	0	-	0
66	-	-	-	-	1	1	-	-	-	0	-	0
67	-	-	-	-	0	0	-	-	-	0	-	0
68	-	-	-	-	0	0	-	-	-	0	1	1
69	-	-	-	-	0	0	1	2	3	0	2	2
70	-	-	-	-	0	0	0	2	2	1	1	2
71	-	1	1	-	0	0	0	0	0	0	3	3
72	-	0	0	-	0	0	1	0	1	0	2	2
73	-	0	0	-	1	1	1	0	1	1	3	4
74	-	0	0	-	0	0	0	0	0	0	6	6
75	-	0	0	1	0	1	0	1	1	1	0	1
76	-	0	0	0	0	0	2	0	2	0	2	2
77	-	0	0	0	0	0	0	1	1	1	0	1
78	-	0	0	0	0	0	0	0	0	2	4	6
79	1	0	1	0	0	0	1	0	1	2	4	6
80	0	0	0	0	0	0	3	0	3	4	3	7
81	0	0	0	1	0	1	2	0	2	2	3	5
82	0	0	0	0	1	1	0	0	0	1	8	9
83	0	0	0	2	1	3	2	2	4	0	4	4
84	0	0	0	0	0	0	2	0	2	0	2	2
85	1	0	1	4	0	4	1	1	2	1	1	2
86	1	0	1	0	0	0	1	3	4	-	7	7

Appendix Table 5 (cont'd)

Haul no. / Total length (cm)	54			55			56			57		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	0	1	2	0	2	0	3	3	-	3	3
88	0	0	0	1	1	2	0	1	1	-	4	4
89	0	0	0	0	0	0	1	1	2	-	6	6
90	0	2	2	0	1	1	0	0	0	-	4	4
91	0	0	0	0	0	0	0	1	1	-	2	2
92	1	1	2	0	0	0	1	0	1	-	2	2
93	-	0	0	0	1	1	-	0	0	-	5	5
94	-	0	0	0	2	2	-	0	0	-	4	4
95	-	0	0	1	3	4	-	1	1	-	2	2
96	-	0	0	-	1	1	-	2	2	-	0	0
97	-	2	2	-	2	2	-	3	3	-	1	1
98	-	4	4	-	0	0	-	0	0	-	0	0
99	-	1	1	-	1	1	-	2	2	-	1	1
100	-	5	5	-	1	1	-	1	1	-	0	0
101	-	1	1	-	2	2	-	1	1	-	1	1
102	-	2	2	-	4	4	-	0	0	-	0	0
103	-	4	4	-	4	4	-	1	1	-	0	0
104	-	4	4	-	5	5	-	0	0	-	3	3
105	-	2	2	-	3	3	-	1	1	-	-	-
106	-	5	5	-	1	1	-	2	2	-	-	-
107	-	2	2	-	3	3	-	0	0	-	-	-
108	-	4	4	-	1	1	-	2	2	-	-	-
109	-	3	3	-	1	1	-	1	1	-	-	-
110	-	2	2	-	2	2	-	0	0	-	-	-
111	-	3	3	-	2	2	-	0	0	-	-	-
112	-	1	1	-	1	1	-	1	1	-	-	-
113	-	1	1	-	2	2	-	0	0	-	-	-
114	-	0	0	-	0	0	-	1	1	-	-	-
115	-	0	0	-	0	0	-	0	0	-	-	-
116	-	0	0	-	0	0	-	1	1	-	-	-
117	-	1	1	-	0	0	-	0	0	-	-	-
118	-	0	0	-	1	1	-	0	0	-	-	-
119	-	0	0	-	-	-	-	0	0	-	-	-
120	-	1	1	-	-	-	-	1	1	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	5	52	57	12	49	61	19	39	58	17	94	111

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	58			59			60			61		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	1	1	-	-	-	-	-	-	-	-	-
53	-	0	0	-	-	-	-	-	-	-	-	-
54	-	0	0	-	-	-	-	-	-	-	-	-
55	-	0	0	-	-	-	-	-	-	-	-	-
56	-	1	1	-	-	-	-	-	-	-	-	-
57	-	1	1	-	-	-	-	-	-	-	-	-
58	-	0	0	-	-	-	-	-	-	-	-	-
59	1	0	1	-	-	-	-	-	-	-	-	-
60	0	0	0	-	-	-	-	-	-	-	-	-
61	0	0	0	-	-	-	-	-	-	-	-	-
62	1	3	4	-	-	-	-	-	-	-	-	-
63	0	0	0	-	-	-	-	-	-	-	-	-
64	1	0	1	-	-	-	-	-	-	1	-	1
65	1	2	3	-	2	2	-	-	-	0	-	0
66	1	1	2	-	0	0	-	-	-	0	-	0
67	3	2	5	-	0	0	-	-	-	0	-	0
68	0	4	4	-	0	0	-	-	-	0	-	0
69	1	8	9	-	2	2	-	-	-	0	-	0
70	3	3	6	1	1	2	-	-	-	0	-	0
71	4	3	7	1	0	1	-	-	-	0	-	0
72	4	6	10	1	2	3	-	-	-	0	-	0
73	2	3	5	0	0	0	-	-	-	0	-	0
74	2	4	6	2	2	4	-	-	-	0	-	0
75	1	6	7	3	0	3	-	-	-	0	1	1
76	4	6	10	3	1	4	-	-	-	0	1	1
77	3	9	12	1	1	2	-	-	-	1	0	1
78	1	3	4	2	1	3	1	-	1	0	0	0
79	1	7	8	4	1	5	0	-	0	0	0	0
80	4	2	6	4	1	5	2	-	2	0	0	0
81	0	3	3	1	2	3	1	-	1	0	0	0
82	1	7	8	3	2	5	0	-	0	2	0	2
83	4	7	11	3	2	5	0	-	0	0	1	1
84	2	3	5	4	0	4	0	-	0	0	0	0
85	1	6	7	4	0	4	0	-	0	1	0	1
86	1	5	6	1	0	1	1	-	1	0	0	0

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	58			59			60			61		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	5	6	0	0	0	0	1	1	1	0	1
88	0	8	8	4	0	4	0	0	0	1	0	1
89	1	3	4	1	1	2	1	0	1	0	0	0
90	1	5	6	1	1	2	0	1	1	1	0	1
91	0	7	7	-	0	0	0	0	0	-	0	0
92	2	3	5	-	2	2	0	2	2	-	0	0
93	-	0	0	-	2	2	1	1	2	-	0	0
94	-	2	2	-	1	1	-	0	0	-	1	1
95	-	1	1	-	4	4	-	0	0	-	0	0
96	-	5	5	-	4	4	-	2	2	-	0	0
97	-	1	1	-	7	7	-	2	2	-	1	1
98	-	2	2	-	4	4	-	3	3	-	0	0
99	-	1	1	-	1	1	-	2	2	-	1	1
100	-	1	1	-	4	4	-	3	3	-	1	1
101	-	0	0	-	4	4	-	0	0	-	1	1
102	-	0	0	-	7	7	-	1	1	-	1	1
103	-	1	1	-	10	10	-	1	1	-	0	0
104	-	1	1	-	8	8	-	5	5	-	0	0
105	-	0	0	-	4	4	-	4	4	-	0	0
106	-	1	1	-	8	8	-	1	1	-	1	1
107	-	0	0	-	7	7	-	0	0	-	1	1
108	-	0	0	-	1	1	-	2	2	-	-	-
109	-	0	0	-	3	3	-	2	2	-	-	-
110	-	0	0	-	1	1	-	3	3	-	-	-
111	-	0	0	-	1	1	-	1	1	-	-	-
112	-	0	0	-	2	2	-	0	0	-	-	-
113	-	0	0	-	2	2	-	0	0	-	-	-
114	-	0	0	-	0	0	-	1	1	-	-	-
115	-	0	0	-	0	0	-	0	0	-	-	-
116	-	0	0	-	0	0	-	0	0	-	-	-
117	-	0	0	-	0	0	-	0	0	-	-	-
118	-	1	1	-	1	1	-	1	1	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	52	154	206	44	110	154	7	39	46	8	11	19

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	62			63			64			65		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	1	-	1	-	-	-	-	-	-
58	-	-	-	0	-	0	-	-	-	-	-	-
59	-	-	-	0	-	0	-	-	-	-	-	-
60	-	-	-	0	-	0	-	-	-	-	-	-
61	-	-	-	0	-	0	-	-	-	-	-	-
62	-	-	-	0	-	0	-	-	-	-	-	-
63	-	-	-	0	-	0	-	-	-	-	-	-
64	-	-	-	0	1	1	-	-	-	-	-	-
65	-	-	-	0	1	1	-	-	-	-	-	-
66	-	-	-	0	1	1	-	-	-	1	-	1
67	-	-	-	0	1	1	-	-	-	0	-	0
68	-	1	1	0	1	1	-	-	-	0	-	0
69	-	0	0	0	0	0	-	-	-	0	-	0
70	-	0	0	0	4	4	1	-	1	0	-	0
71	-	0	0	0	1	1	0	-	0	1	1	2
72	-	0	0	1	1	2	0	-	0	1	1	2
73	-	1	1	0	1	1	0	-	0	0	0	0
74	-	0	0	0	1	1	1	-	1	0	0	0
75	1	0	1	0	0	0	3	1	4	1	2	3
76	0	1	1	1	3	4	0	0	0	0	0	0
77	0	0	0	1	0	1	1	0	1	4	0	4
78	0	0	0	1	2	3	1	0	1	1	0	1
79	0	0	0	0	0	0	0	0	0	1	0	1
80	0	0	0	0	1	1	1	0	1	1	0	1
81	0	0	0	0	1	1	4	3	7	3	0	3
82	0	0	0	0	0	0	1	0	1	2	1	3
83	2	0	2	2	0	2	2	0	2	0	1	1
84	1	1	2	1	0	1	1	0	1	1	0	1
85	-	0	0	0	0	0	0	0	0	0	1	1
86	-	0	0	0	0	0	1	0	1	0	0	0

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	62			63			64			65		
	M	F	T	M	F	T	M	F	T	M	F	T
87	-	0	0	0	1	1	0	1	1	2	0	2
88	-	0	0	1	1	2	1	0	1	1	1	2
89	-	0	0	0	0	0	1	0	1	1	0	1
90	-	0	0	0	0	0	-	0	0	-	0	0
91	-	1	1	0	0	0	-	0	0	-	0	0
92	-	0	0	0	0	0	-	2	2	-	0	0
93	-	0	0	1	1	2	-	1	1	-	0	0
94	-	0	0	-	1	1	-	1	1	-	1	1
95	-	0	0	-	1	1	-	0	0	-	0	0
96	-	0	0	-	1	1	-	0	0	-	2	2
97	-	1	1	-	1	1	-	2	2	-	0	0
98	-	0	0	-	2	2	-	0	0	-	0	0
99	-	0	0	-	0	0	-	0	0	-	0	0
100	-	1	1	-	0	0	-	0	0	-	0	0
101	-	1	1	-	1	1	-	0	0	-	1	1
102	-	0	0	-	5	5	-	1	1	-	1	1
103	-	1	1	-	0	0	-	0	0	-	1	1
104	-	2	2	-	2	2	-	1	1	-	0	0
105	-	2	2	-	0	0	-	1	1	-	1	1
106	-	2	2	-	1	1	-	0	0	-	2	2
107	-	2	2	-	2	2	-	0	0	-	0	0
108	-	1	1	-	1	1	-	0	0	-	1	1
109	-	1	1	-	-	-	-	0	0	-	0	0
110	-	1	1	-	-	-	-	1	1	-	0	0
111	-	0	0	-	-	-	-	0	0	-	0	0
112	-	3	3	-	-	-	-	0	0	-	1	1
113	-	0	0	-	-	-	-	2	2	-	1	1
114	-	0	0	-	-	-	-	0	0	-	-	-
115	-	0	0	-	-	-	-	1	1	-	-	-
116	-	1	1	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	24	28	10	41	51	19	18	37	21	20	41

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	66			67			68			69		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	1	1	-	-	-	-	-	-	-	-	-
60	-	0	0	-	-	-	-	-	-	-	-	-
61	-	0	0	-	-	-	-	-	-	-	-	-
62	-	0	0	-	-	-	-	-	-	-	-	-
63	-	0	0	-	-	-	-	-	-	-	-	-
64	-	0	0	-	-	-	-	-	-	-	-	-
65	-	0	0	-	-	-	-	1	1	-	-	-
66	1	0	1	-	-	-	-	0	0	1	-	1
67	0	0	0	-	-	-	1	2	3	0	1	1
68	0	0	0	-	-	-	0	0	0	0	0	0
69	0	0	0	-	1	1	1	2	3	0	0	0
70	0	0	0	-	0	0	0	1	1	0	0	0
71	0	0	0	-	0	0	2	0	2	0	2	2
72	0	0	0	-	0	0	2	3	5	0	0	0
73	0	0	0	1	0	1	4	4	8	0	0	0
74	0	0	0	0	0	0	1	2	3	0	0	0
75	0	0	0	0	0	0	4	4	8	0	1	1
76	0	0	0	0	0	0	5	6	11	0	0	0
77	0	0	0	0	1	1	12	2	14	0	0	0
78	0	0	0	1	0	1	4	3	7	1	0	1
79	0	1	1	1	0	1	6	2	8	2	1	3
80	0	0	0	2	0	2	11	2	13	1	0	1
81	0	0	0	1	0	1	14	7	21	2	0	2
82	0	0	0	2	0	2	9	2	11	3	1	4
83	0	0	0	2	0	2	9	2	11	3	2	5
84	0	0	0	1	0	1	7	2	9	3	1	4
85	1	0	1	0	0	0	8	3	11	1	0	1
86	1	0	1	1	0	1	7	2	9	2	0	2

Appendix Table 5 (cont'd)

Haul no.	66			67			68			69		
Total length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
87	-	0	0	1	0	1	4	4	8	0	0	0
88	-	0	0	0	2	2	4	7	11	2	0	2
89	-	0	0	2	1	3	3	2	5	2	0	2
90	-	0	0	1	1	2	2	5	7	1	0	1
91	-	0	0	-	1	1	0	5	5	-	0	0
92	-	1	1	-	0	0	1	7	8	-	1	1
93	-	2	2	-	1	1	1	5	6	-	0	0
94	-	0	0	-	2	2	1	8	9	-	0	0
95	-	0	0	-	1	1	-	5	5	-	1	1
96	-	1	1	-	1	1	-	3	3	-	2	2
97	-	0	0	-	1	1	-	5	5	-	1	1
98	-	1	1	-	1	1	-	8	8	-	1	1
99	-	1	1	-	1	1	-	5	5	-	1	1
100	-	1	1	-	4	4	-	5	5	-	5	5
101	-	1	1	-	0	0	-	2	2	-	1	1
102	-	2	2	-	4	4	-	2	2	-	2	2
103	-	1	1	-	3	3	-	2	2	-	2	2
104	-	1	1	-	0	0	-	7	7	-	1	1
105	-	0	0	-	0	0	-	5	5	-	1	1
106	-	0	0	-	0	0	-	3	3	-	1	1
107	-	1	1	-	1	1	-	2	2	-	0	0
108	-	0	0	-	2	2	-	2	2	-	2	2
109	-	0	0	-	0	0	-	0	0	-	0	0
110	-	1	1	-	1	1	-	0	0	-	0	0
111	-	0	0	-	0	0	-	1	1	-	0	0
112	-	2	2	-	0	0	-	1	1	-	0	0
113	-	0	0	-	1	1	-	0	0	-	1	1
114	-	1	1	-	-	-	-	2	2	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	3	19	22	16	31	47	123	155	278	24	32	56

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	70			71			72			73		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-	-	-	-	-
63	2	-	2	-	-	-	-	-	-	-	-	-
64	0	-	0	-	-	-	-	-	-	-	-	-
65	0	-	0	-	-	-	-	-	-	-	-	-
66	0	-	0	1	-	1	-	-	-	-	-	-
67	0	-	0	1	1	2	-	-	-	-	-	-
68	0	-	0	0	1	1	-	-	-	-	-	-
69	0	-	0	0	1	1	-	1	1	-	-	-
70	0	-	0	1	1	2	1	0	1	-	-	-
71	0	-	0	2	2	4	0	0	0	1	-	1
72	1	-	1	4	1	5	0	0	0	0	-	0
73	0	-	0	0	2	2	0	1	1	0	-	0
74	1	1	2	6	3	9	0	2	2	1	-	1
75	2	0	2	7	9	16	0	2	2	0	-	0
76	2	1	3	7	3	10	0	0	0	0	-	0
77	0	0	0	16	7	23	1	0	1	1	1	2
78	5	2	7	10	2	12	1	1	2	0	0	0
79	1	0	1	19	2	21	2	0	2	3	0	3
80	7	0	7	25	3	28	3	1	4	2	0	2
81	3	0	3	33	1	34	1	0	1	0	0	0
82	3	0	3	31	2	33	2	0	2	2	1	3
83	4	1	5	38	3	41	2	0	2	6	0	6
84	2	0	2	45	7	52	2	0	2	7	1	8
85	3	2	5	34	4	38	0	0	0	1	0	1
86	2	0	2	32	9	41	1	0	1	3	0	3

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	70			71			72			73		
	M	F	T	M	F	T	M	F	T	M	F	T
87	0	0	0	18	2	20	0	0	0	1	0	1
88	1	2	3	19	4	23	0	0	0	5	0	5
89	1	2	3	13	2	15	2	0	2	3	1	4
90	-	0	0	8	1	9	0	1	1	1	0	1
91	-	2	2	5	7	12	0	1	1	0	0	0
92	-	1	1	5	5	10	1	0	1	2	2	4
93	-	0	0	3	7	10	-	1	1	1	2	3
94	-	1	1	2	6	8	-	1	1	-	0	0
95	-	0	0	1	10	11	-	1	1	-	3	3
96	-	1	1	0	8	8	-	3	3	-	4	4
97	-	1	1	1	7	8	-	0	0	-	2	2
98	-	3	3	1	7	8	-	0	0	-	6	6
99	-	0	0	1	6	7	-	1	1	-	6	6
100	-	2	2	-	6	6	-	1	1	-	6	6
101	-	0	0	-	6	6	-	0	0	-	5	5
102	-	1	1	-	8	8	-	1	1	-	3	3
103	-	1	1	-	8	8	-	4	4	-	1	1
104	-	2	2	-	7	7	-	0	0	-	2	2
105	-	1	1	-	7	7	-	1	1	-	4	4
106	-	1	1	-	4	4	-	0	0	-	3	3
107	-	1	1	-	7	7	-	1	1	-	3	3
108	-	0	0	-	2	2	-	4	4	-	2	2
109	-	1	1	-	5	5	-	0	0	-	2	2
110	-	0	0	-	4	4	-	2	2	-	2	2
111	-	0	0	-	1	1	-	0	0	-	1	1
112	-	1	1	-	2	2	-	0	0	-	0	0
113	-	-	-	-	0	0	-	1	1	-	0	0
114	-	-	-	-	0	0	-	0	0	-	2	2
115	-	-	-	-	1	1	-	0	0	-	0	0
116	-	-	-	-	1	1	-	1	1	-	1	1
117	-	-	-	-	1	1	-	-	-	-	-	-
118	-	-	-	-	0	0	-	-	-	-	-	-
119	-	-	-	-	0	0	-	-	-	-	-	-
120	-	-	-	-	0	0	-	-	-	-	-	-
121	-	-	-	-	0	0	-	-	-	-	-	-
122	-	-	-	-	0	0	-	-	-	-	-	-
123	-	-	-	-	0	0	-	-	-	-	-	-
124	-	-	-	-	0	0	-	-	-	-	-	-
125	-	-	-	-	0	0	-	-	-	-	-	-
126	-	-	-	-	0	0	-	-	-	-	-	-
127	-	-	-	-	0	0	-	-	-	-	-	-
128	-	-	-	-	1	1	-	-	-	-	-	-
Total	40	31	71	389	207	596	19	33	52	40	66	106

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	74			75			76			77		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
61	-	-	-	-	-	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-	-	-	-	-	-
63	-	-	-	-	-	-	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-	-	-	-	-
65	-	-	-	-	-	-	-	-	-	-	-	-
66	-	-	-	-	-	-	-	-	-	-	-	-
67	-	-	-	-	-	-	-	-	-	-	-	-
68	-	-	-	-	-	-	-	-	-	-	-	-
69	-	-	-	-	-	-	-	-	-	-	-	-
70	-	-	-	-	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	-	-
72	-	-	-	-	-	-	-	-	-	-	-	-
73	-	-	-	-	-	-	-	-	-	-	-	-
74	-	-	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	-	-	-	-	-	-	-
77	-	-	-	-	-	-	-	1	1	2	-	2
78	-	-	-	-	-	-	-	0	0	0	-	0
79	-	-	-	-	-	-	-	0	0	1	-	1
80	1	-	1	-	-	-	-	0	0	3	-	3
81	0	-	0	-	-	-	-	1	1	1	-	1
82	0	-	0	-	-	-	-	0	0	1	-	1
83	0	-	0	-	-	-	1	0	1	3	-	3
84	0	-	0	-	-	-	0	0	0	1	-	1
85	2	-	2	1	-	1	2	0	2	2	-	2
86	-	-	0	0	-	0	1	0	1	1	-	1

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	74			75			76			77		
	M	F	T	M	F	T	M	F	T	M	F	T
87	-	-	0	0	-	0	0	2	2	1	-	1
88	-	-	0	1	-	1	1	0	1	0	-	0
89	-	-	0	0	-	0	0	0	0	1	-	1
90	-	-	0	1	-	1	0	0	0	0	2	2
91	-	-	0	-	-	0	0	0	0	0	1	1
92	-	-	0	-	-	0	0	0	0	0	0	0
93	-	-	0	-	-	0	0	3	3	1	2	3
94	-	-	0	-	1	1	1	0	1	-	2	2
95	-	-	0	-	0	0	-	0	0	-	1	1
96	-	1	1	-	0	0	-	0	0	-	3	3
97	-	1	1	-	0	0	-	0	0	-	6	6
98	-	0	0	-	1	1	-	1	1	-	7	7
99	-	0	0	-	1	1	-	2	2	-	6	6
100	-	0	0	-	1	1	-	0	0	-	6	6
101	-	1	1	-	1	1	-	1	1	-	8	8
102	-	0	0	-	1	1	-	1	1	-	1	1
103	-	0	0	-	5	5	-	1	1	-	7	7
104	-	0	0	-	0	0	-	1	1	-	8	8
105	-	0	0	-	1	1	-	0	0	-	7	7
106	-	0	0	-	0	0	-	3	3	-	8	8
107	-	1	1	-	0	0	-	1	1	-	9	9
108	-	1	1	-	2	2	-	1	1	-	2	2
109	-	0	0	-	0	0	-	0	0	-	3	3
110	-	0	0	-	0	0	-	1	1	-	5	5
111	-	0	0	-	1	1	-	1	1	-	4	4
112	-	0	0	-	1	1	-	0	0	-	3	3
113	-	0	0	-	-	-	-	1	1	-	1	1
114	-	1	1	-	-	-	-	-	-	-	1	1
115	-	0	0	-	-	-	-	-	-	-	0	0
116	-	1	1	-	-	-	-	-	-	-	0	0
117	-	-	-	-	-	-	-	-	-	-	0	0
118	-	-	-	-	-	-	-	-	-	-	1	1
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	3	7	10	3	16	19	6	22	28	18	104	122

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	78			79			80			81		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	2	1	3	-	-	-	-	-	-
45	-	-	-	1	2	3	-	-	-	-	-	-
46	-	-	-	1	2	3	-	-	-	-	-	-
47	-	-	-	1	0	1	-	-	-	-	-	-
48	-	-	-	1	3	4	-	-	-	-	-	-
49	-	-	-	0	2	2	-	-	-	-	1	1
50	-	-	-	7	4	11	-	-	-	-	0	0
51	-	-	-	4	8	12	1	-	1	-	0	0
52	-	-	-	6	5	11	0	-	0	-	0	0
53	-	-	-	1	13	14	1	-	1	2	1	3
54	-	-	-	18	11	29	1	1	2	2	3	5
55	-	-	-	6	12	18	1	0	1	0	0	0
56	-	-	-	14	14	28	0	0	0	2	1	3
57	-	-	-	10	14	24	0	0	0	0	0	0
58	-	-	-	19	19	38	1	1	2	0	1	1
59	-	-	-	14	20	34	0	3	3	3	6	9
60	-	-	-	15	20	35	2	1	3	1	3	4
61	-	-	-	18	13	31	2	5	7	4	4	8
62	-	-	-	24	22	46	4	1	5	4	13	17
63	-	-	-	21	21	42	2	2	4	5	4	9
64	-	-	-	22	36	58	3	10	13	3	11	14
65	-	-	-	16	39	55	5	8	13	11	12	23
66	-	-	-	24	38	62	6	4	10	7	10	17
67	-	-	-	21	31	52	4	16	20	10	16	26
68	-	-	-	22	37	59	4	13	17	10	12	22
69	-	-	-	24	30	54	11	13	24	2	13	15
70	-	-	-	18	28	46	9	16	25	5	9	14
71	-	-	-	15	31	46	5	20	25	6	11	17
72	-	-	-	11	20	31	5	17	22	4	6	10
73	-	-	-	11	12	23	7	12	19	4	6	10
74	-	-	-	4	16	20	10	12	22	2	8	10
75	-	-	-	4	14	18	6	6	12	1	6	7
76	-	-	-	5	8	13	3	7	10	0	3	3
77	-	-	-	2	8	10	2	7	9	0	6	6
78	-	-	-	4	11	15	2	0	2	2	2	4
79	-	-	-	2	7	9	3	6	9	2	5	7
80	1	-	1	2	5	7	1	3	4	0	2	2
81	0	-	0	3	3	6	0	4	4	0	3	3
82	0	-	0	1	2	3	0	3	3	1	0	1
83	0	-	0	2	4	6	0	4	4	0	0	0
84	0	-	0	1	3	4	1	1	2	0	0	0
85	1	-	1	1	2	3	0	0	0	0	1	1
86	0	-	0	2	0	2	0	2	2	1	0	1

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	78			79			80			81		
	M	F	T	M	F	T	M	F	T	M	F	T
87	1	2	3	1	0	1	1	0	1	1	0	1
88	0	0	0	0	2	2	0	2	2	0	1	1
89	0	0	0	1	1	2	1	2	3	0	0	0
90	0	0	0	-	0	0	0	1	1	0	0	0
91	1	0	1	-	0	0	0	1	1	0	2	2
92	-	0	0	-	0	0	2	0	2	0	0	0
93	-	0	0	-	1	1	-	2	2	0	1	1
94	-	2	2	-	1	1	-	0	0	1	0	1
95	-	0	0	-	0	0	-	1	1	-	0	0
96	-	0	0	-	1	1	-	0	0	-	0	0
97	-	1	1	-	1	1	-	0	0	-	0	0
98	-	0	0	-	0	0	-	1	1	-	0	0
99	-	0	0	-	1	1	-	2	2	-	0	0
100	-	1	1	-	1	1	-	0	0	-	0	0
101	-	3	3	-	3	3	-	0	0	-	1	1
102	-	2	2	-	1	1	-	0	0	-	0	0
103	-	2	2	-	1	1	-	1	1	-	0	0
104	-	1	1	-	1	1	-	1	1	-	1	1
105	-	0	0	-	-	-	-	2	2	-	0	0
106	-	1	1	-	-	-	-	1	1	-	0	0
107	-	0	0	-	-	-	-	1	1	-	1	1
108	-	2	2	-	-	-	-	0	0	-	-	-
109	-	0	0	-	-	-	-	0	0	-	-	-
110	-	1	1	-	-	-	-	1	1	-	-	-
111	-	1	1	-	-	-	-	-	-	-	-	-
112	-	1	1	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	-	-	-	-	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	20	24	402	606	1008	106	217	323	96	186	282

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	82			83			84			85		
	M	F	T	M	F	T	M	F	T	M	F	T
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	1	1	-	-	-	-	-	-	-	-	-
57	-	1	1	-	-	-	-	-	-	-	-	-
58	-	1	1	-	-	-	-	-	-	-	-	-
59	-	0	0	-	-	-	-	-	-	-	-	-
60	-	0	0	-	-	-	-	-	-	-	-	-
61	1	1	2	-	-	-	-	-	-	-	-	-
62	1	2	3	-	-	-	-	-	-	-	-	-
63	1	1	2	-	-	-	-	-	-	-	-	-
64	3	1	4	-	-	-	-	-	-	-	-	-
65	3	10	13	-	-	-	-	-	-	-	-	-
66	7	5	12	-	-	-	-	-	-	-	-	-
67	3	6	9	-	-	-	-	-	-	-	-	-
68	6	9	15	-	-	-	-	-	-	-	-	-
69	8	12	20	-	-	-	-	-	-	-	-	-
70	10	5	15	-	-	-	-	-	-	1	-	1
71	8	15	23	-	-	-	1	-	1	0	-	0
72	7	9	16	-	-	-	1	-	1	0	-	0
73	6	10	16	-	-	-	0	-	0	0	-	0
74	5	4	9	-	-	-	0	-	0	0	-	0
75	0	3	3	-	-	-	0	-	0	0	-	0
76	6	5	11	1	-	1	1	-	1	0	-	0
77	3	8	11	0	-	0	0	-	0	1	-	1
78	1	5	6	0	-	0	1	-	1	1	-	1
79	1	5	6	0	-	0	3	-	3	1	-	1
80	2	4	6	1	-	1	0	-	0	0	-	0
81	1	4	5	1	-	1	5	-	5	1	-	1
82	1	4	5	2	-	2	5	-	5	1	-	1
83	0	6	6	1	-	1	1	-	1	1	-	1
84	1	3	4	1	-	1	5	-	5	0	-	0
85	0	3	3	1	-	1	2	-	2	1	-	1
86	0	1	1	3	-	3	2	-	2	3	-	3

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	82			83			84			85		
	M	F	T	M	F	T	M	F	T	M	F	T
87	2	0	2	1	1	2	4	-	4	4	-	4
88	1	0	1	1	0	1	2	-	2	1	-	1
89	-	4	4	1	0	1	2	3	5	-	1	1
90	-	1	1	0	0	0	1	2	3	-	1	1
91	-	3	3	0	0	0	2	1	3	-	1	1
92	-	0	0	0	1	1	1	1	2	-	0	0
93	-	1	1	0	1	1	1	3	4	-	1	1
94	-	4	4	1	0	1	-	1	1	-	0	0
95	-	3	3	0	2	2	-	4	4	-	3	3
96	-	0	0	0	7	7	-	6	6	-	1	1
97	-	0	0	0	2	2	-	6	6	-	1	1
98	-	5	5	0	6	6	-	5	5	-	0	0
99	-	4	4	0	3	3	-	9	9	-	0	0
100	-	2	2	0	4	4	-	12	12	-	3	3
101	-	2	2	0	0	0	-	9	9	-	3	3
102	-	0	0	0	6	6	-	6	6	-	4	4
103	-	3	3	0	2	2	-	10	10	-	3	3
104	-	5	5	0	6	6	-	11	11	-	3	3
105	-	2	2	1	2	3	-	5	5	-	6	6
106	-	0	0	-	4	4	-	4	4	-	1	1
107	-	0	0	-	2	2	-	6	6	-	2	2
108	-	1	1	-	0	0	-	7	7	-	1	1
109	-	0	0	-	3	3	-	6	6	-	3	3
110	-	2	2	-	1	1	-	1	1	-	0	0
111	-	1	1	-	2	2	-	2	2	-	0	0
112	-	-	-	-	3	3	-	4	4	-	0	0
113	-	-	-	-	2	2	-	0	0	-	0	0
114	-	-	-	-	1	1	-	1	1	-	0	0
115	-	-	-	-	0	0	-	2	2	-	1	1
116	-	-	-	-	1	1	-	2	2	-	1	1
117	-	-	-	-	1	1	-	-	-	-	-	-
118	-	-	-	-	-	-	-	-	-	-	-	-
119	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	-	-	-	-	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	-	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
Total	88	187	275	16	63	79	40	129	169	16	40	56

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	Total		
	M	F	T
44	2	1	3
45	1	2	3
46	1	2	3
47	1	0	1
48	1	4	5
49	0	3	3
50	7	4	11
51	5	9	14
52	6	7	13
53	8	14	22
54	21	15	36
55	9	12	21
56	18	24	42
57	17	20	37
58	23	25	48
59	22	34	56
60	23	27	50
61	32	29	61
62	37	59	96
63	40	38	78
64	42	78	120
65	62	110	172
66	79	94	173
67	72	112	184
68	86	131	217
69	102	142	244
70	102	130	232
71	116	152	268
72	112	141	253
73	124	141	265
74	143	164	307
75	137	151	288
76	163	170	333
77	196	163	359
78	186	168	354
79	177	174	351
80	246	182	428
81	199	177	376
82	194	194	388
83	205	187	393
84	183	221	404
85	158	206	364
86	140	217	357

Appendix Table 5 (cont'd)

Haul no. Total length (cm)	Total		
	M	F	T
87	118	186	304
88	92	193	285
89	77	188	265
90	27	169	196
91	22	164	186
92	28	148	176
93	16	142	158
94	13	151	165
95	2	138	140
96	1	146	147
97	2	131	133
98	1	136	137
99	1	128	129
100	0	132	132
101	0	109	109
102	0	125	125
103	0	126	126
104	0	146	146
105	1	108	109
106	-	95	95
107	-	88	88
108	-	75	75
109	-	52	52
110	-	54	54
111	-	32	32
112	-	37	37
113	-	21	21
114	-	14	14
115	-	8	8
116	-	10	10
117	-	5	5
118	-	5	5
119	-	2	2
120	-	2	2
121	-	0	0
122	-	0	0
123	-	1	1
124	-	0	0
125	-	0	0
126	-	0	0
127	-	0	0
128	-	1	1
Total	3899	7202	11103

Appendix Table 6. Dogfish maturity states by haul for G.B. REED cruise Sept 7-Oct 1, 1982.

Maturity state	Haul no. 2		3		4		6		7	
	M	F	M	F	M	F	M	F	M	F
I_1	-	-	-	-	2	-	1	-	1	-
I_1D_1	-	1	-	2	-	-	-	-	-	-
I_1D_2	-	-	-	-	-	-	-	-	-	-
I_2	-	-	1	-	2	-	-	-	-	-
I_2D_2	-	-	-	-	-	-	-	-	-	2
R_1D_1	-	-	-	2	-	1	-	-	-	-
R_1D_2	-	2	-	4	-	7	-	6	-	2
R_1D_3	-	-	-	1	-	-	-	-	-	-
R_1D_4	-	1	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	-	-	-	-	-
R_2D_1	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	-	-	-	-	-	-	-	-	1
R_2D_3	-	5	-	5	-	3	-	3	-	2
R_2D_4	-	-	-	-	-	3	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	-	-	-	-	-	-	-	-	-
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	1	-	-	-	-	-	-	-	-
R	28	-	17	-	8	-	3	-	14	-
R_3D_3	-	-	-	-	-	-	-	-	-	1
R_3D_4	-	-	-	-	-	-	-	2	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	-	-	-	-	-	-	-	-	-
R_3D_7	-	-	-	-	-	-	-	-	-	4
R_3D_8	-	6	-	1	-	-	-	1	-	2
Total	28	16	18	15	12	14	4	12	15	14

Appendix Table 6 (cont'd)

Maturity state	Haul no. 8 M	8 F	9 M	9 F	10 M	10 F	12 M	12 F	18 M	18 F
I_1	-	-	1	-	26	-	12	-	-	-
I_1D_1	-	-	-	4	-	58	-	9	-	18
I_1D_2	-	-	-	1	-	15	-	6	-	2
I_2	-	-	3	-	38	-	6	-	-	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	-	-	7	-	41	-	9	-	1
R_1D_2	-	2	-	26	-	136	-	18	-	21
R_1D_3	-	-	-	2	-	6	-	1	-	1
R_1D_4	-	-	-	-	-	-	-	-	-	1
R_1D_5	-	-	-	2	-	-	-	-	-	-
R_2D_1	-	-	-	1	-	-	-	-	-	-
R_2D_2	-	-	-	-	-	14	-	9	-	14
R_2D_3	-	-	-	6	-	30	-	8	-	7
R_2D_4	-	-	-	4	-	2	-	-	-	2
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	1	-	8	-	-	-	-	-	-
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-
R	14	-	77	-	72	-	84	-	15	-
R_3D_3	-	-	-	-	-	1	-	-	-	-
R_3D_4	-	-	-	1	-	-	-	-	-	-
R_3D_5	-	-	-	1	-	-	-	-	-	-
R_3D_6	-	-	-	139	-	4	-	12	-	-
R_3D_7	-	7	-	-	-	-	-	-	-	-
R_3D_8	-	-	-	3	-	12	-	3	-	15
Total	14	10	81	205	136	319	102	75	15	82

Appendix Table 6 (cont'd)

Maturity state	Haul no. 19 M	19 F	20 M	20 F	21 M	21 F	23 M	23 F	24 M	24 F
I_1	1	-	2	-	1	-	-	-	1	-
I_1D_1	-	4	-	14	-	-	-	2	-	1
I_1D_2	-	-	-	3	-	-	-	-	-	1
I_2	2	-	10	-	-	-	1	-	-	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	1	-	5	-	-	-	4	-	-
R_1D_2	-	3	-	35	-	1	-	4	-	3
R_1D_3	-	-	-	-	-	-	-	1	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	-	-	-	-	-
R_2D_1	-	-	-	1	-	-	-	-	-	-
R_2D_2	-	-	-	15	-	-	-	-	-	1
R_2D_3	-	-	-	9	-	-	-	1	-	2
R_2D_4	-	-	-	1	-	-	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	-	-	-	-	-	-	-	-	1
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-
R	16	-	76	-	14	-	12	-	12	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	1
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	2	-	-	-	-	-	1	-	-
R_3D_7	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	1	-	5	-	1	-	-	-	3
Total	19	11	88	88	15	2	13	13	13	13

Appendix Table 6 (cont'd)

Maturity state	Haul no. 25 M	25 F	28 M	28 F	31 M	31 F	32 M	32 F	33 M	33 F
I_1	2	-	22	-	-	-	18	-	-	-
I_1D_1	-	-	-	35	-	1	-	80	-	7
I_1D_2	-	-	-	-	-	-	-	6	-	-
I_2	3	-	2	-	1	-	14	-	2	-
I_2D_2	-	-	-	1	-	-	-	-	-	-
R_1D_1	-	-	-	46	-	-	-	100	-	9
R_1D_2	-	-	-	38	-	1	-	136	-	17
R_1D_3	-	-	-	-	-	-	-	1	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	1	-	1	-	-
R_2D_1	-	-	-	-	-	-	-	2	-	-
R_2D_2	-	1	-	6	-	-	-	54	-	11
R_2D_3	-	-	-	4	-	-	-	24	-	3
R_2D_4	-	-	-	-	-	-	-	6	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	-	-	6	-	2	-	-	-	-
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-
R	6	-	40	-	12	-	49	-	27	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	-	-	12	-	1	-	1	-	-
R_3D_7	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	-	-	-	-	-	-	12	-	2
Total	11	1	64	148	13	6	81	423	29	49

Appendix Table 6 (cont'd)

Maturity state	Haul no. 35 M	35 F	38 M	38 F	39 M	39 F	42 M	42 F	44 M	44 F	45 M	45 F
I_1	1	-	-	-	1	-	-	-	-	-	-	-
I_1D_1	-	1	-	14	-	2	-	1	-	2	-	-
I_1D_2	-	-	-	-	-	-	-	-	-	-	-	-
I_2	5	-	7	-	3	-	-	-	1	-	-	-
I_2D_2	-	-	-	1	-	-	-	-	-	-	-	-
R_1D_1	-	3	-	38	-	2	-	-	-	-	-	-
R_1D_2	-	4	-	76	-	11	-	14	-	-	-	1
R_1D_3	-	-	-	2	-	-	-	-	-	-	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	1	-	-	-	1	-	-	-	-	-	-
R_2D_1	-	-	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	1	-	16	-	7	-	3	-	-	-	-
R_2D_3	-	1	-	10	-	2	-	-	-	-	-	-
R_2D_4	-	-	-	-	-	-	-	-	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	4	-	-	-	1	-	-	-	1	-	1
R_2D_7	-	-	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-	-	-
R	26	-	37	-	12	-	5	-	14	-	20	-
R_3D_3	-	-	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	-	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	53	-	1	-	16	-	-	-	10	-	6
R_3D_7	-	-	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	2	-	11	-	4	-	-	-	-	-	-
Total	32	70	44	169	16	46	5	18	15	13	20	8

Appendix Table 6 (cont'd)

Maturity state	Haul no. 47 M	47 F	48 M	48 F	49 M	49 F	51 M	51 F	54 M	54 F
I_1	1	-	25	-	-	-	1	-	-	-
I_1D_1	-	2	-	29	-	3	-	9	-	1
I_1D_2	-	-	-	-	-	-	-	-	-	-
I_2	1	-	6	-	1	-	1	-	-	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	-	-	8	-	2	-	5	-	-
R_1D_2	-	1	-	14	-	6	-	4	-	2
R_1D_3	-	-	-	-	-	-	-	-	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	1	-	2	-	2
R_2D_1	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	-	-	9	-	12	-	1	-	-
R_2D_3	-	-	-	3	-	2	-	1	-	-
R_2D_4	-	-	-	-	-	-	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	-	-	-	-	-	-	1	-	10
R_2D_7	-	2	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-
R	25	-	4	-	1	-	10	-	5	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	2	-	-	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	27	-	-	-	-	-	14	-	37
R_3D_7	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	1	-	1	-	1	-	-	-	-
Total	27	33	35	64	2	29	12	37	5	52

Appendix Table 6 (cont'd)

Maturity state	Haul no. 57 M	57 F	58 M	58 F	60 M	60 F	61 M	61 F	64 M	64 F
I_1	1	-	11	-	-	-	1	-	-	-
I_1D_1	-	24	-	47	-	-	-	1	-	1
I_1D_2	-	-	-	1	-	-	-	-	-	-
I_2	2	-	10	-	-	-	-	-	2	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	13	-	27	-	-	-	1	-	1
R_1D_2	-	26	-	39	-	-	-	-	-	3
R_1D_3	-	-	-	-	-	-	-	-	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	-	-	-	-	-
R_2D_1	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	18	-	21	-	-	-	1	-	3
R_2D_3	-	1	-	4	-	1	-	-	-	-
R_2D_4	-	1	-	1	-	-	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	-	-	2	-	8	-	1	-	1
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	1	-	-	-	-	-	-
R	14	-	31	-	7	-	7	-	17	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	-
R_3D_5	-	1	-	-	-	-	-	-	-	-
R_3D_6	-	4	-	2	-	29	-	7	-	6
R_3D_7	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	6	-	5	-	1	-	-	-	3
Total	17	94	52	150	7	39	8	11	19	18

Appendix Table 6 (cont'd)

Maturity state	Haul no. 65 M	65 F	66 M	66 F	70 M	70 F	71 M	71 F	74 M	74 F
I_1	-	-	1	-	2	-	3	-	-	-
I_1D_1	-	3	-	2	-	2	-	11	-	-
I_1D_2	-	-	-	-	-	-	-	1	-	-
I_2	3	-	-	-	3	-	4	-	-	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	1	-	-	-	1	-	24	-	-
R_1D_2	-	3	-	-	-	8	-	28	-	-
R_1D_3	-	-	-	-	-	-	-	-	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	1	-	-	-	-	-	9	-	-
R_2D_1	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	1	-	-	-	4	-	3	-	-
R_2D_3	-	-	-	-	-	2	-	4	-	-
R_2D_4	-	-	-	-	-	-	-	-	-	-
R_2D_5	-	-	-	-	-	-	-	-	-	-
R_2D_6	-	2	-	2	-	1	-	23	-	2
R_2D_7	-	-	-	-	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	1	-	-
R	18	-	2	-	35	-	382	-	3	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	8	-	11	-	9	-	92	-	4
R_3D_7	-	-	-	3	-	-	-	1	-	-
R_3D_8	-	-	-	1	-	4	-	9	-	1
Total	21	19	3	19	40	31	389	206	3	7

Appendix Table 6 (cont'd)

Maturity state	Haul no. 75 M	75 F	78 M	78 F	79 M	79 F	81 M	81 F	82 M	82 F
I_1	-	-	-	-	21	-	21	-	10	-
I_1D_1	-	-	-	-	-	43	-	42	-	29
I_1D_2	-	-	-	-	-	-	-	1	-	2
I_2	-	-	-	-	12	-	7	-	15	-
I_2D_2	-	-	-	-	-	-	-	-	-	-
R_1D_1	-	-	-	-	-	16	-	11	-	2
R_1D_2	-	-	-	2	-	-	-	-	-	11
R_1D_3	-	-	-	-	-	-	-	-	-	-
R_1D_4	-	-	-	-	-	-	-	-	-	-
R_1D_5	-	-	-	-	-	-	-	1	-	1
R_2D_1	-	-	-	-	-	-	-	-	-	-
R_2D_2	-	-	-	-	-	-	-	-	-	6
R_2D_3	-	-	-	-	-	-	-	1	-	1
R_2D_4	-	-	-	-	-	-	-	-	-	-
R_2D_5	-	-	-	1	-	-	-	-	-	-
R_2D_6	-	3	-	10	-	-	-	2	-	10
R_2D_7	-	-	-	1	-	-	-	-	-	-
R_2D_8	-	-	-	-	-	-	-	-	-	-
R	3	-	4	-	6	-	10	-	6	-
R_3D_3	-	-	-	-	-	-	-	-	-	-
R_3D_4	-	-	-	-	-	-	-	-	-	-
R_3D_5	-	-	-	-	-	-	-	-	-	-
R_3D_6	-	13	-	6	-	-	-	-	-	6
R_3D_7	-	-	-	-	-	-	-	-	-	-
R_3D_8	-	-	-	-	-	-	-	-	-	1
Total	3	16	4	20	39	59	38	58	31	69

Appendix Table 6 (cont'd)

Maturity state	Haul no. 84 M	84 F	85 M	85 F	Total M	Total F
I_1	-	-	-	-	190	-
I_1D_1	-	-	-	-	-	505
I_1D_2	-	-	-	-	-	39
I_2	-	-	1	-	169	-
I_2D_2	-	-	-	-	-	4
R_1D_1	-	-	-	-	-	381
R_1D_2	-	-	-	-	-	715
R_1D_3	-	-	-	-	-	15
R_1D_4	-	-	-	-	-	2
R_1D_5	-	-	-	-	-	23
R_2D_1	-	-	-	-	-	4
R_2D_2	-	-	-	-	-	232
R_2D_3	-	-	-	-	-	145
R_2D_4	-	-	-	-	-	20
R_2D_5	-	-	-	-	-	1
R_2D_6	-	4	-	29	-	136
R_2D_7	-	-	-	-	-	3
R_2D_8	-	-	-	-	-	3
R	3	-	15	-	1318	-
R_3D_3	-	-	-	-	-	2
R_3D_4	-	-	-	-	-	6
R_3D_5	-	-	-	-	-	2
R_3D_6	-	1	-	10	-	544
R_3D_7	-	-	-	-	-	15
R_3D_8	-	-	-	1	-	119
Total	3	5	16	40	1677	2916

Appendix Table 7. Sablefish length frequencies by haul and sex for G.B. REED cruise, Sept 7-Oct 1, 1982.

Haul no.	2				3				4				10			
Fork length (cm)	M	F	U	T	M	F	U	T	M	F	U	T	M	F	U	T
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	1	-	-	1	2	-	-	2
35	-	-	-	-	1	-	-	1	0	1	-	1	1	-	-	1
36	-	1	-	1	1	2	-	3	6	0	-	6	6	-	-	6
37	-	1	-	1	1	2	-	3	3	2	-	5	5	1	-	6
38	-	0	-	0	5	1	-	6	8	1	-	9	7	4	-	11
39	-	0	-	0	1	0	-	1	4	2	-	6	6	4	-	10
40	-	0	-	0	1	1	-	2	1	1	-	2	3	3	-	6
41	-	1	-	1	2	2	-	4	3	2	-	5	1	2	-	3
42	1	0	-	1	1	1	-	2	0	0	-	0	2	0	-	2
43	1	2	-	3	0	0	-	0	3	0	-	3	2	0	-	2
44	2	0	-	2	6	0	-	6	2	3	-	5	1	0	-	1
45	0	2	-	2	0	2	-	2	3	2	-	5	2	0	-	2
46	1	1	-	2	0	0	-	0	2	2	-	4	0	0	-	0
47	4	1	-	5	0	1	-	1	1	3	-	4	2	1	-	3
48	0	2	-	2	1	1	-	2	0	2	-	2	0	0	-	0
49	3	4	-	7	-	-	-	-	1	1	-	2	1	0	-	1
50	7	1	-	8	-	-	-	-	-	-	-	-	-	1	-	1
51	11	1	-	12	-	-	-	-	-	-	-	-	-	1	-	1
52	11	1	-	12	-	-	-	-	-	-	-	-	-	-	-	-
53	15	4	-	19	-	-	-	-	-	-	-	-	-	-	-	-
54	9	6	-	15	-	-	-	-	-	-	-	-	-	-	-	-
55	5	3	-	8	-	-	-	-	-	-	-	-	-	-	-	-
56	9	6	-	15	-	-	-	-	-	-	-	-	-	-	-	-
57	7	3	-	10	-	-	-	-	-	-	-	-	-	-	-	-
58	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
59	3	2	-	5	-	-	-	-	-	-	-	-	-	-	-	-
60	2	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
61	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
62	1	0	-	1	-	-	-	-	-	-	-	-	-	-	-	-
63	1	0	-	1	-	-	-	-	-	-	-	-	-	-	-	-
64	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
65	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
66	1	0	-	1	-	-	-	-	-	-	-	-	-	-	-	-
67	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
68	2	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-
69	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
70	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
71	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
72	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
73	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
74	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 7 (cont'd)

Haul no.	2				3				4				10			
Fork length (cm)	M	F	U	T	M	F	U	T	M	F	U	T	M	F	U	T
75	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
76	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
77	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
78	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
79	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	97	50	0	147	20	13	0	33	38	22	0	60	41	17	0	58

Appendix Table 7 (cont'd)

Haul no.	13				16				17				49			
Fork length (cm)	M	F	U	T	M	F	U	T	M	F	U	T	M	F	U	T
32	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	20	20	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	57	57	-	-	-	-	-	-	-	-
36	1	-	-	1	-	-	84	84	-	-	-	-	1	-	-	1
37	0	-	-	0	-	-	64	64	-	-	-	-	4	4	-	8
38	0	-	-	0	-	-	44	44	2	-	-	2	7	7	-	14
39	0	-	-	0	-	-	21	21	0	-	-	0	6	4	-	10
40	0	-	-	0	-	-	7	7	0	-	-	0	10	5	-	15
41	1	-	-	1	-	-	1	1	0	-	-	0	2	9	-	11
42	3	1	-	4	-	-	1	1	0	-	-	0	4	3	-	7
43	7	1	-	8	-	-	-	-	2	-	-	2	4	3	-	7
44	6	3	-	9	-	-	-	-	2	-	-	2	2	4	-	6
45	10	5	-	15	-	-	-	-	3	3	-	6	2	1	-	3
46	13	3	-	16	-	-	-	-	3	1	-	4	5	1	-	6
47	11	4	-	15	-	-	-	-	5	0	-	5	0	3	-	3
48	11	1	-	12	-	-	-	-	3	1	-	4	2	1	-	3
49	13	3	-	16	-	-	-	-	9	3	-	12	2	0	-	2
50	18	3	-	21	-	-	-	-	10	4	-	14	2	0	-	2
51	22	3	-	25	-	-	-	-	21	4	-	25	0	1	-	1
52	25	3	-	28	-	-	-	-	13	7	-	20	0	-	-	0
53	34	7	-	41	-	-	-	-	13	13	-	26	0	-	-	0
54	23	4	-	27	-	-	-	-	10	12	-	22	0	-	-	0
55	8	5	-	13	-	-	-	-	5	7	-	12	0	-	-	0
56	9	3	-	12	-	-	-	-	2	2	-	4	1	-	-	1
57	3	1	-	4	-	-	-	-	1	4	-	5	-	-	-	-
58	0	0	-	0	-	-	-	-	0	2	-	2	-	-	-	-
59	1	0	-	1	-	-	-	-	0	1	-	1	-	-	-	-
60	1	0	-	1	-	-	-	-	0	1	-	1	-	-	-	-
61	-	0	-	0	-	-	-	-	0	1	-	1	-	-	-	-
62	-	1	-	1	-	-	-	-	1	1	-	2	-	-	-	-
63	-	0	-	0	-	-	-	-	0	0	-	0	-	-	-	-
64	-	0	-	0	-	-	-	-	0	1	-	1	-	-	-	-
65	-	0	-	0	-	-	-	-	2	0	-	2	-	-	-	-
66	-	0	-	0	-	-	-	-	-	0	-	0	-	-	-	-
67	-	0	-	0	-	-	-	-	-	0	-	0	-	-	-	-
68	-	0	-	0	-	-	-	-	-	0	-	0	-	-	-	-
69	-	0	-	0	-	-	-	-	-	1	-	1	-	-	-	-
70	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
71	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
72	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
73	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
74	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 7 (cont'd)

Haul no. / Fork length (cm)	13				16				17				49			
	M	F	U	T	M	F	U	T	M	F	U	T	M	F	U	T
75	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
76	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
77	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
78	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
79	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
80	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
81	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
82	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
83	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
84	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-
85	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Total	220	52	0	272	0	0	305	305	107	69	0	176	54	46	0	100

Appendix Table 7 (cont'd)

Haul no. Fork length (cm)	TOTAL			
	M	F	U	T
32	-	-	1	1
33	-	-	5	5
34	3	-	20	23
35	2	1	57	60
36	15	3	84	102
37	13	10	64	87
38	29	13	44	86
39	17	10	21	48
40	15	10	7	32
41	9	16	1	26
42	11	5	1	17
43	19	6	-	25
44	21	10	-	31
45	20	15	-	35
46	24	8	-	32
47	23	13	-	36
48	17	8	-	25
49	29	11	-	40
50	37	9	-	46
51	54	10	-	64
52	49	11	-	60
53	62	24	-	86
54	42	22	-	64
55	18	15	-	33
56	21	11	-	32
57	11	8	-	19
58	0	3	-	3
59	4	3	-	7
60	3	3	-	6
61	0	1	-	1
62	2	2	-	4
63	1	0	-	1
64	0	1	-	1
65	2	0	-	2
66	1	0	-	1
67	0	0	-	0
68	2	1	-	3
69	0	1	-	1
70	0	0	-	0
71	0	1	-	1
72	0	0	-	0
73	0	1	-	1
74	0	0	-	0

Appendix Table 7 (cont'd)

Haul no. Fork length (cm)	TOTAL			
	M	F	U	T
76	0	0	-	0
77	0	0	-	0
78	0	1	-	1
79	1	0	-	1
80	-	0	-	0
81	-	0	-	0
82	-	0	-	0
83	-	0	-	0
84	-	0	-	0
85	-	1	-	1
Total	577	269	305	1151

Appendix Table 8. Pollock length frequencies by haul and sex for G.B. REED cruise, Sept 7-Oct 1, 1982.

Haul no.	20			22			Total		
Fork length (cm)	M	F	T	M	F	T	M	F	T
31	1	-	1	-	-	-	1	-	1
32	0	-	0	-	-	-	0	-	0
33	0	1	1	-	-	-	0	1	1
34	0	0	0	-	-	-	0	0	0
35	0	1	1	-	-	-	0	1	1
36	1	1	2	-	-	-	1	1	2
37	0	1	1	2	-	2	2	1	3
38	2	2	4	1	3	4	3	5	8
39	3	2	5	4	0	4	7	2	9
40	7	6	13	3	0	3	10	6	16
41	9	9	18	0	4	4	9	13	22
42	10	7	17	5	3	8	15	10	25
43	8	5	13	5	5	10	13	10	23
44	8	3	11	6	4	10	14	7	21
45	4	7	11	5	6	11	9	13	22
46	6	5	11	1	1	2	7	6	13
47	4	3	7	3	3	6	7	6	13
48	8	1	9	2	2	4	10	3	13
49	5	11	16	4	3	7	9	14	23
50	4	7	11	2	2	4	6	9	15
51	2	3	5	3	4	7	5	7	12
52	5	6	11	1	0	1	6	6	12
53	1	6	7	1	4	5	2	10	12
54	2	2	4	1	2	3	3	4	7
55	1	4	5	0	2	2	1	6	7
56	2	3	5	0	-	0	2	3	5
57	-	3	3	1	-	1	1	3	4
58	-	2	2	-	-	-	-	2	2
59	-	1	1	-	-	-	-	1	1
60	-	1	1	-	-	-	-	1	1
61	-	1	1	-	-	-	-	1	1
Total	93	104	197	50	48	98	143	152	295

Appendix Table 9. Length frequencies of species other than dogfish, pollock and sablefish, by haul and sex for G.B. REED cruise, Sept 7-Oct 1, 1982.

Haul no.	Pacific cod haul 66			Halibut (all hauls)			Lingcod (all hauls)		
Fork length (cm)	M	F	T	M	F	T	M	F	T
34	1	-	1	-	-	-	-	-	-
35	0	1	1	-	1	1	-	-	-
36	0	2	2	-	0	0	-	-	-
37	0	1	1	-	0	0	-	-	-
38	1	2	3	-	0	0	-	-	-
39	3	3	6	-	0	0	-	-	-
40	5	2	7	-	0	0	-	-	-
41	8	6	14	-	0	0	-	-	-
42	5	5	10	-	0	0	-	-	-
43	3	4	7	-	0	0	-	1	1
44	4	4	8	-	0	0	-	0	0
45	5	4	9	-	0	0	-	0	0
46	1	3	4	-	0	0	-	0	0
47	3	4	7	-	0	0	-	0	0
48	1	1	2	1	0	1	-	0	0
49	2	3	5	0	0	0	1	0	1
50	2	5	7	0	0	0	0	0	0
51	2	3	5	0	0	0	0	0	0
52	3	2	5	0	3	3	3	1	4
53	3	6	9	1	0	1	1	0	1
54	4	5	9	1	0	1	0	3	3
55	3	3	6	0	1	1	0	1	1
56	3	7	10	0	0	0	0	0	0
57	8	5	13	0	1	1	1	0	1
58	5	4	9	1	2	3	0	0	0
59	6	5	11	2	0	2	0	0	0
60	6	6	12	0	1	1	2	0	2
61	7	4	11	0	1	1	1	0	1
62	7	4	11	0	0	0	1	1	2
63	3	4	7	1	0	1	0	2	2
64	4	2	6	0	0	0	1	1	2
65	2	2	4	0	0	0	1	1	2
66	2	0	2	1	0	1	0	0	0
67	3	0	3	1	0	1	2	0	2
68	0	3	3	0	0	0	1	1	2
69	3	2	5	0	0	0	0	0	0
70	1	1	2	1	0	1	1	0	1

Appendix Table 9 (cont'd)

Haul no.	Pacific cod haul 66			Halibut (all hauls)			Lingcod (all hauls)		
Fork length (cm)	M	F	T	M	F	T	M	F	T
71	1	1	2	1	0	1	0	0	0
72	3	2	5	1	0	1	0	2	2
73	1	0	1	1	0	1	1	0	1
74	1	0	1	0	0	0	2	0	2
75	-	1	1	0	1	1	2	0	2
76	-	0	0	0	-	0	1	1	2
77	-	1	1	1	-	1	0	0	0
78	-	1	1	0	-	0	2	3	5
79	-	0	0	0	-	0	0	2	2
80	-	1	1	0	-	0	0	0	0
81	-	-	-	0	-	0	1	1	2
82	-	-	-	0	-	0	1	3	4
83	-	-	-	0	-	0	0	1	1
84	-	-	-	0	-	0	1	1	2
85	-	-	-	0	-	0	0	4	4
86	-	-	-	0	-	0	0	1	1
87	-	-	-	0	-	0	0	2	2
88	-	-	-	0	-	0	0	2	2
89	-	-	-	0	-	0	1	3	4
90	-	-	-	1	-	1	0	1	1
91	-	-	-	0	-	0	1	0	1
92	-	-	-	0	-	0	0	0	0
93	-	-	-	0	-	0	0	0	0
94	-	-	-	1	-	1	1	0	1
95	-	-	-	0	-	0	1	0	1
96	-	-	-	0	-	0	0	0	0
97	-	-	-	0	-	0	0	0	0
98	-	-	-	0	-	0	0	0	0
99	-	-	-	0	-	0	0	0	0
100	-	-	-	0	-	0	0	0	0
101	-	-	-	0	-	0	-	1	1
102	-	-	-	0	-	0	-	0	0
103	-	-	-	0	-	0	-	0	0
104	-	-	-	0	-	0	-	1	1
105	-	-	-	1	-	1	-	0	0
106	-	-	-	0	-	0	-	1	1
107	-	-	-	0	-	0	-	1	1
108	-	-	-	0	-	0	-	1	1
109	-	-	-	0	-	0	-	2	2
110	-	-	-	0	-	0	-	3	3

Appendix Table 9 (cont'd)

Haul no.	Pacific cod haul 66			Halibut (all hauls)			Lingcod (all hauls)		
Fork length (cm)	M	F	T	M	F	T	M	F	T
111	-	-	-	0	-	0	-	0	0
112	-	-	-	0	-	0	-	2	2
113	-	-	-	0	-	0	-	1	1
114	-	-	-	0	-	0	-	1	1
115	-	-	-	0	-	0	-	0	0
116	-	-	-	0	-	0	-	3	3
117	-	-	-	0	-	0	-	0	0
118	-	-	-	0	-	0	-	1	1
119	-	-	-	0	-	0	-	1	1
120	-	-	-	0	-	0	-	1	1
121	-	-	-	1	-	1	-	0	0
122	-	-	-	-	-	-	-	1	1
123	-	-	-	-	-	-	-	2	2
Total	125	125	250	18	11	29	31	62	93

POOR

QUALITY

ORIGINAL